
WAGES TABLES,

WITH

SUPPLEMENTARY AND EXPLANATORY REMARKS.

AGRICULTURAL IMPLEMENTS.

Under this head are included returns from works manufacturing a great variety of machines and implements. It was found impracticable to classify the different establishments, owing to the great variety of articles made. They are therefore grouped under the general designation, "Agricultural implements". A rough classification, however, for convenience in discussing these returns, may be made as follows:

- 1st, plows and cultivating implements.
- 2d, drills, seeding-machines, rakes, etc.
- 3d, mowers, reapers, harvesters, etc.

Fifty-seven schedules were sent to as many establishments, located chiefly in the West. From these, 20 returns were received, of which only 12 were sufficiently complete to justify publication. Five of these 12 would fall under the first class named, "plows and cultivating implements"; 2 under the second class, "drills, seeding-machines, rakes, etc."; and 5 under the third class, "mowers, reapers, harvesters, etc.". These returns, though few in number, include statements of wages from some of the most important agricultural works in the country. In 1 schedule rates of wages are given from 1861, in 2 from 1864, and in 1 from 1866, these 4 schedules furnishing at least one statement for each of the three classes named.

Extra earnings or deductions.—The conditions of demand in this industry are such that at certain seasons of the year workmen have frequent opportunities for extra earnings from working over-time. At other seasons the hours of labor are shortened, with a corresponding reduction in earnings. The demand for each class of agricultural implements has its own season, which is an exceedingly short and in many cases an uncertain one, depending largely upon the abundance of the crops. In the seasons of no demand, or a dull one, the workmen are employed either the usual hours or reduced time, making implements in anticipation of the coming demand. When this comes it is frequently so pressing that the works are compelled to run over-time, resulting in increased earnings to the workers. This is especially true of the third class of implements mentioned. Where the schedules contain statements regarding the rates paid for over-time, they are reported to be proportionate to those paid for regular work, no extra rate being given.

In this industry no allowances or privileges are reported as given to employés.

The only classes of workmen reported as being obliged to pay out a part of the wages received are carpenters, wood-workers, and molders, who furnish most of their own hand tools. It is usually stated, however, that the expense of these tools is quite small.

Payments.—Without exception, the establishments from which returns were received paid their employés in cash.

Regarding intervals of payment, or the frequency with which the workmen received their pay, there is no regularity, as the following table will show:

Interval of payment.	1880.	1875.	1870.	1865.	1860.	1855.	1850.	1845.	1840.
Weekly.....	5	6	4	2	.....	1	1	1	1
Semi-monthly.....	1	1	.....	1	1	.....	.....	.....	.....
Monthly.....	6	5	5	3	.....	.....	.....	.....	.....

A remarkable feature regarding the intervals of payment at these works is that, though the general tendency in industries is to shorten the interval of payment, there is not a case in which the longer interval, as the month, has given place to the shorter interval, as the week, but there are two cases in which the shorter interval has given place to the longer. One establishment which in 1870 and 1875 paid weekly, in 1880 paid monthly; while another establishment, which from 1842 to 1859 paid weekly, from 1860 to 1869 paid every two weeks, and from 1870 to 1880 paid monthly. The reason for these changes is not given.

Hours of labor.—The regular hours of labor for all classes of employes at these works were, without exception, 10. In some few cases, by reason of the light demand for goods at certain seasons of the year, the hours are shortened, and in two instances a variation in the hours of labor is reported as caused by the length of the days, the men not working by artificial light. Wherever an opinion is expressed regarding the effect of the shorter hours upon the amount and character of product, it is that there is no change in the character of the work, but that there is a reduction in the amount of work proportionate to the reduction in the hours of labor.

Regularity of employment.—From the subjoined table it will be seen that the agricultural-implement establishments reporting have run very regularly. Where the number of months per year operated has not been less than 11, the causes of stoppage have been annual repairs and taking inventory; where the number of months has been less than 11, the stoppage has arisen in most cases from limited demand, generally growing out of harvests below the average. In one case it is stated that the capacity of the establishment exceeds the demand for its products.

Years.	MONTHS.							
	8.	8½.	9.	10.	10½.	11.	11½.	12.
1841-1845.....								1
1846-1850.....								1
1851-1855.....								1
1856-1860.....								1
1861-1865.....						1		2
1866-1870.....	1			1		3	1	2
1871-1875.....			2	3		4	1	3
1876-1880.....		1	1	1		4	1	4
1880.....			1	1	1	4	1	5

Relation of wages and labor to selling price and cost.—Three questions were asked under this head: The first, relative to the selling prices of the product; the second, relative to the cost of labor to a unit of product; and the third, relative to the percentage of wages to cost. It will be noticed that these relate, first, to the selling price; second, to the labor cost; and third, to the percentage of wages to cost, not to selling price, so that where the tables are properly prepared the percentage of the second table to the first will not be that shown in the third, though the cost of the article can be arrived at roughly by a simple arithmetical calculation based on the second and third tables. However, it must be noted that out of the apparent profit shown by such a calculation must, in many instances, come the cost of a large number of items, such as rent, insurance, taxes, bad debts, selling expenses, office expenses, etc.

Most of the answers to this series of questions, not only those relating to the manufacture of agricultural implements, but to all other industries, are exceedingly indefinite and unsatisfactory, and bear upon their face evidences of error. Some of the answers, however, are very valuable, having evidently been prepared with great care, and give evidences of reliability.

One return from a Kentucky establishment manufacturing plows gives an interesting and valuable statement regarding the relations of labor cost to selling price and total cost. Other statements are not so complete, but where figures are given they agree substantially with those in this table, so far as relates to the percentage of wages to cost. For the years 1875 and 1880 the figures in the several returns showing this percentage ranged from 28 to 33½ per cent. The tables from this Kentucky return are as follows, premising that the statement covers four grades of plows:

Selling price of four grades of plows produced at a Kentucky plow-works.

Year.	Selling price of each grade of plows.				Total labor cost per plow.				Percentage of wages to cost in the manufacture of plows.
1866.....	\$0 37	\$8 50	\$11 00	\$13 80	\$1 90	\$2 77	\$3 30	\$4 10	Per cent. 37
1870.....	6 00	8 00	10 40	12 80	1 73	2 35	2 84	3 02	35
1875.....	4 48	6 48	9 10	11 20	1 00	1 28	1 66	2 33	28
1880.....	4 00	5 00	8 00	9 33	1 05	1 40	1 58	2 22	29

The establishment making this return states that the reduction in the percentage of wages to labor cost of product is due to the introduction of labor-saving machinery; that various machines have been introduced for

wood- and iron-working and for iron-molding. The result has been largely increased production per hand employed; in molding, an increase of 25 per cent., and in wood- and iron-working, 50 per cent. The introduction of this machinery has also permitted the employment of less skilled labor, and as a result wages have been somewhat reduced.

One return from an Ohio establishment, manufacturing rakes, drills, and seeders, gives the details of price, cost, and percentage of wages in 1880 with comparative fullness. They are as follows:

Classes of implements.	Price of product.	Labor cost.	Percentage of wages to cost.
Horse hay-rakes	\$23 00	\$1 25 to \$4 75	<i>Per cent.</i> 22 to 25
Grain-drills	55 00	8 75 to 9 50	25
Broad-cast seeders	45 00	6 20 to 7 25	23 to 25

No returns were received showing the prices of product or the cost of labor.

It is evident that the columns "percentage of wages to cost" in these two tables can not refer to the same items. One works can not produce at an expense of 12½ per cent. for labor what costs the other 50 per cent.

Efficiency of labor and labor-saving machinery.—In the manufacture of agricultural implements a large proportion of the labor employed is engaged in iron- and wood-working and in iron-founding. Many labor-saving machines have been introduced into these occupations. This industry has shared in these improvements, and almost without exception the returns received note the placing of much improved machinery in the several works. The statement as to the effect of this machinery is, with scarcely an exception, that it has increased the amount of product per man, and improved the quality of the articles manufactured; but, owing to the great and rapid development of the demand for agricultural implements, wages have been decreased but little if any from this cause, nor has the number of employes been materially reduced.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Hapgood Plow Company, Alton, Illinois.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.
Grinder	Day	\$2 00	\$3 00	\$1 37½	\$2 00	\$2 00	\$2 00	\$2 50	\$2 75	\$3 00	\$3 00
Machinist, iron	do	2 25	2 00	2 00	2 00	2 25	2 50	2 75	3 00	3 00	3 00
Machinist, wood	do	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 25	2 50	2 50
Carpenter	do	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 75	3 00	3 00
Painter	do							2 75	2 75	3 00	3 00
Fitter	do	2 00	2 00	2 00	2 00	2 00	2 25	2 50	2 75	3 00	3 00
Engineer	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 50	3 50	3 50
Blacksmith	do	2 25	2 25	2 25	2 25	2 25	2 25	2 75	3 00	3 25	3 50
Blacksmith's helper	do	1 37½	1 37½	1 37½	1 37½	1 50	1 50	1 75	2 00	2 00	2 00
Boy	do	75-	75-	62½-	62½-	75-	75-	75-	1 00-	1 00-	1 00-
		1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 50	1 50	1 50
Laborer	do	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 75	1 75	2 00

REMARKS.—These works make plows only. In 1877, 1878, and 1879 they ran extra hours for 6 weeks or 2 months in the winter, making 1½ day per week extra. These extra earnings have been included in above table.

These are the works mentioned in the preliminary statement that from 1870 to 1875 paid each week, and since has increased the interval to monthly.

In 1875 it is stated that the cost of labor was about one-half as much as of material, and in 1880 about one-third. The percentage of labor cost to total cost is placed at 30 per cent. in 1875 and 24 per cent. in 1880.

The following statement as to prices of different kinds of plows is given:

Year.	No. 8 plows, each.	No. 12 plows, each.	No. 12 breaking plows, each.	Gang-plows, each.	Sulky-plows, each.
1870	\$5 00	\$10 50	\$21 50		
1875	8 00	11 75	24 00	\$75 00	\$55 00
1880	5 00	9 50	16 50	55 00	40 00

STATISTICS OF WAGES—AGRICULTURAL IMPLEMENTS.

William Deering, Chicago, Illinois.

Classes of employés.	Unit of payment.	DATES.					Classes of employés.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Foreman	Month..	\$93 60	\$93 60	\$93 60	\$93 60	\$93 60	Painter	Day	\$1 60	\$1 75	\$1 75	\$1 75	\$1 75
Molder	Day	2 20	2 20	2 20	2 20	2 20	Engineer	do	2 00	2 00	2 00	2 00	2 00
Machinist, iron	do	2 25	2 00	2 00	2 00	2 00	Blacksmith	do	2 20	2 00	2 00	2 00	2 00
Pattern-maker	do	3 50	3 50	3 50	3 50	3 50	Blacksmith's helper	do	1 50	1 40	1 40	1 40	1 40
Carpenter	do	2 20	2 00	2 00	2 00	2 00	Laborer	do	1 50	1 35	1 35	1 35	1 50

REMARKS.—At these works mowers, reapers, droppers, etc., are made. There are opportunities for over-time of from two to four hours a day from April 1 to August 1 each year. These would

increase rates from 20 per cent. to 40 per cent. for the day's work when over-time is made, and have not been considered in the table.

Henry F. Blount, Evansville, Indiana.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman	Month..	\$108 00										
Machinist, iron	Day	2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Painter	do	2 50	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75
Stocker	do	2 50	2 70	3 00	3 00	3 00	3 00	3 00	3 30	3 30	3 30	3 30
Fitter	do	2 00	2 70	3 00	3 00	3 00	3 00	3 00	3 50	3 50	3 50	3 50
Finisher	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Engineer	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Blacksmith	do	2 50										
Blacksmith's helper	do	1 50										
Boy	do	1 00										
Laborer	do	1 50										

REMARKS.—These works make plows and cotton-cultivators. From 1865 to 1875 they were in operation an average of but 8½ months a year.

This establishment pays weekly.

The labor cost of plows in 1870 is given as \$2 70, in 1875 as \$2 60, and in 1880 as \$2 40. This is about one-third of the total cost.

An establishment in Kentucky.

Classes of employés.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Month..	\$106 67	\$106 67	\$106 67	\$106 67	\$106 67	\$106 67	\$106 67	\$150 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$80 00
Molder	Day	2 42	2 31	2 75	2 75	3 15	3 00	3 00	3 00	3 00	3 25	3 50	3 50	3 50	3 17	3 17
Molder's helper	do	1 67	1 50	1 67	1 67	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 17
Cupolaman	do	1 06	1 66	1 06	1 06	1 06	1 06	1 06	1 06	1 06	1 06	1 06	1 06	1 06	1 06	1 06
Grinder	do	1 07	1 75	1 85	2 00	2 00	2 00	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Pattern-maker	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Painter	do	75- 1 67	75- 1 50	75- 1 75	75- 1 85	75- 2 00	1 00- 2 35	1 00- 2 50	1 00- 2 25	75- 2 25	75- 2 25	75- 2 25	75- 2 25	75- 2 25	75- 2 70	75- 2 88
Stocker	do	2 50- 1 65	2 50- 1 65	2 75- 1 85	2 85- 2 00	3 25- 2 25	3 25- 2 25	3 25- 2 25	3 25- 2 25	3 50- 2 25	3 50- 2 25	4 50- 2 75	5 67- 2 75	5 25- 3 00	4 04- 2 70	4 83- 2 88
Engineer	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 00	2 00
Blacksmith	do	1 10- 2 25	1 00- 2 13	1 00- 2 25	1 15- 2 50	1 25- 3 00	1 25- 3 60	1 50- 3 25	1 50- 3 25	1 50- 3 50	1 50- 3 90	1 50- 4 16	1 50- 4 16	1 50- 4 16	1 50- 4 16	1 67- 4 16
Blacksmith's helper	do	1 10	1 00	1 00	1 10½	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 66½
Laborer	do	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50	1 10½- 1 50

REMARKS.—Plows only are made at this establishment. Some over-time is made in busy seasons. This would increase the rates about 8 per cent. for all hands but blacksmiths, and has not been included in the table.

Payments are weekly.

The relation of wages and labor to selling price and cost of plows in Kentucky, given in the preliminary statement, is from these works.

STATISTICS OF WAGES—AGRICULTURAL IMPLEMENTS.

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Belcher and Taylor Agricultural Tool Company, Chicopee Falls, Massachusetts.

Classes of employes.	Unit of payment.	DATES.																
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.
Foreman.....	Day....	\$2 05	\$2 05	\$2 75	\$2 75	\$2 75	\$3 00	\$3 17	\$3 17	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$2 50	\$2 25
Molder.....	do....	2 00	1 01	2 03	2 00	2 10	2 25	2 50	2 50	2 48	2 50	2 50	2 50	2 50	2 33	2 33	2 17	2 15
Molder's helper.....	do....	1 25	1 25	1 30	1 25	1 30	1 35	1 50	1 05	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 35	1 33
Cupolaman.....	do....	1 40	1 40	1 50	1 45	1 50	1 57	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 50	1 50
Grinder.....	do....	1 25	1 25	1 30	1 25	1 30	1 35	1 50	1 50	1 40	1 40	1 40	1 50	1 50	1 50	1 50	1 37	1 33
Machinist, iron (foreman).....	do....	2 30	2 33	2 41	2 55	2 00	2 05	2 75	2 75	2 70	2 75	3 00	3 00	2 75	2 75	2 75	2 05	2 00
Machinist, wood.....	do....	2 00	2 05	2 10	2 11	2 12	2 30	2 75	2 07	2 18	2 75	3 00	3 00	2 75	2 75	2 75	2 50	2 00
Carpenter.....	do....	1 00	1 00	2 00	2 00	2 10	2 30	2 75	2 30	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 25	2 00
Painter.....	do....	1 33	1 35	1 40	1 30	1 40	1 50	1 00	1 75	1 75	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 53
Finisher, wood.....	do....	2 40	2 45	2 53	2 51	2 55	2 55	2 50	2 05	2 05	2 00	2 00	2 02	2 02	2 02	2 02	2 50	2 50
Blacksmith.....	do....	2 25	2 27	2 33	2 37	2 40	2 25	2 50	2 50	2 05	2 50	2 50	2 50	2 50	2 50	3 00	2 50	2 50
Blacksmith's helper.....	do....	1 25	1 25	1 25	1 25	1 25	1 40	1 50	1 50	1 50	1 50	1 50	1 40	1 40	1 40	1 40	1 33	1 33
Laborer.....	do....	1 20	1 15	1 17	1 21	1 25	1 35	1 50	1 50	1 40	1 40	1 50	1 55	1 35	1 35	1 33	1 33	1 33

REMARKS.—The statement is made in this return that plows, harrows, cultivators, hay-tedders, horse-rakes, etc., are produced at these works. There are some opportunities for over-time for those workmen who are not dependent upon machinery. The water-

wheel or engine is rarely run after regular hours. These extras have been included in the above table.

The schedule contained the following complete statement as to prices, cost, etc., of agricultural implements from 1865 to 1880:

Year.	SELLING PRICE.					TOTAL COST, INCLUDING LABOR AND MATERIALS.					LABOR COST.				
	Corn-shellers.	Plows.	Hay-tedders.	Horse-rakes.	Feed-cutters.	Corn-shellers.	Plows.	Hay-tedders. (a)	Horse-rakes.	Feed-cutters.	Corn-shellers.	Plows.	Hay-tedders.	Horse-rakes.	Feed-cutters.
1865.....	\$8 00	\$0 42	\$50 00	\$35 00	\$0 50	\$5 12	\$4 63	\$39 00	\$28 00	\$0 00	\$0 02	\$0 50	\$3 50	\$3 30	\$1 08
1870.....	7 15	8 42	45 00	32 00	0 00	4 02	4 30	35 00	25 00	8 75	57	50½	4 04	2 87½	99½
1875.....	7 15	0 00	45 00	28 00	8 02	4 02	4 33	34 00	23 00	8 50	54	47½	3 74	2 53	93½
1880.....	0 55	5 80	40 00	24 00	8 25	4 00	4 20	32 00	21 00	8 00	40	42	3 20	2 10	80

a Including royalty.

It is stated that the above total cost includes only cost of materials and labor. To this, to arrive at total cost, must be added ex-

penses of superintendence, rents, taxes, insurance, cartage, commission, bad debts, etc.

The Richardson Manufacturing Company, Worcester, Massachusetts.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman.....	Month..	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$100 00	\$100 00	\$100 00
Machinist, iron.....	Day....	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50	2 50	2 50
Machinist, wood.....	do....	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50	2 50	2 50
Painter.....	do....	2 70	2 70	2 70	2 70	2 70	3 00	3 00	3 00	3 00	3 00	3 00
Engineer.....	do....	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Blacksmith.....	do....	2 75	2 75	2 75	2 75	2 75	3 00	3 00	3 00	3 00	3 00	3 00
Blacksmith's helper.....	do....	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00
Laborer.....	do....	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75

REMARKS.—Mowing-machines, hay-tedders, horse-rakes, etc., are made at this establishment. From 1870 to 1875 these works were in operation an average of 10½ months a year; from 1876 to 1879, 8½ months; and in 1880 but 4½ months. Stoppages were due chiefly to light demand for product.

The following are given in the schedule appended to this return as the average retail prices of the several classes of machines named for the years mentioned; the wholesale price is stated to be about 25 per cent. less

Year.	Mowing-machines.	Hay-tedders.	Horse-rakes.
1862.....	\$110 00	\$75 00	\$40 00
1865.....	125 00	75 00	40 00
1870.....	100 00	75 00	35 00
1875.....	95 00	60 00	30 00
1880.....	75 00	60 00	30 00

STATISTICS OF WAGES—AGRICULTURAL IMPLEMENTS.

Gale Manufacturing Company, Albion, Michigan.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Molder.....	Day...	\$1 60 $\frac{3}{4}$	\$1 00 $\frac{3}{4}$	\$1 00 $\frac{3}{4}$	\$1 00 $\frac{3}{4}$	\$1 00 $\frac{3}{4}$	\$1 00 $\frac{3}{4}$	\$1 00 $\frac{3}{4}$
Grinder.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Machinist, wood.....	do	2 33 $\frac{1}{3}$	2 33 $\frac{1}{3}$	2 33 $\frac{1}{3}$	2 33 $\frac{1}{3}$	2 33 $\frac{1}{3}$	2 33 $\frac{1}{3}$	2 33 $\frac{1}{3}$
Pattern-maker.....	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Painter.....	do	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$
Engineer.....	do	1 01 $\frac{1}{2}$	1 01 $\frac{1}{2}$	1 01 $\frac{1}{2}$	1 01 $\frac{1}{2}$	1 01 $\frac{1}{2}$	1 01 $\frac{1}{2}$	1 01 $\frac{1}{2}$
Blacksmith.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00

REMARK.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman.....	Month...	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00
Grinder.....	Day	2 25	2 25	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	2 00
Machinist, iron.....	do	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 25
Pattern-maker.....	do	2 50	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 25
Carpenter.....	do	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75	2 00
Engineer.....	do	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 00
Blacksmith.....	do	2 50	2 50	2 50	2 50	2 25	2 25	2 25	2 25	2 00	2 00	2 25
Blacksmith's helper.....	do	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 50
Laborer.....	do	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARK.—These works do not make complete machines, but only the knives and sickles, sections, spring keys, etc. As, however, quite a number of the classes of employes are the same as those of agricultural-implement works, the table is inserted.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.																
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.
Foreman.....	Month...	\$91 00	\$91 00	\$91 00	\$78 00	\$78 00	\$78 00	\$65 00	\$65 00	\$65 00	\$65 00	\$78 00	\$78 00	\$65 00	\$65 00	\$65 00	\$65 00	\$65 00
Molder.....	Day.....	2 50	2 50	2 00	2 00	2 10	2 10	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Molder's helper.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Cupolaman.....	do	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67
Machinist, iron.....	do	2 00	2 00	1 83 $\frac{1}{3}$	1 90	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 50
Carpenter.....	do	2 00	2 00	2 00	2 10	2 10	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	1 83	1 67
Painter.....	do	1 90	1 90	2 00	2 00	1 85	1 85	2 00	2 00	2 00	2 00	1 50	1 50	2 25	2 25	2 00	1 67	1 67
Engineer.....	do	2 50	2 35	2 35	2 10	2 10	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 67	1 67
Blacksmith.....	do	1 83	1 83	1 83	1 67	1 67	1 67	1 67	1 67	1 67	2 00	2 00	1 67	1 67	2 00	1 67	1 67	1 67
Blacksmith's helper.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 40	1 40	1 33	1 33	1 50	1 50	1 50	1 50	1 25	1 25	1 25
Boy.....	do	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Laborer.....	do	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 67	1 67	1 67	1 67	1 83	1 83	1 25

REMARKS.—The statement is made in the schedule appended to the return received from the above-named establishment that these works manufacture grain drills and seeding-machines. They are

operated 10 hours a day from February 1 to December 1, and 9 $\frac{1}{2}$ hours for the balance of the year.

The following statement as to prices, etc., is given:

Year.	SELLING PRICE.		LABOR COST.		PERCENTAGE OF WAGES TO COST.		Year.	SELLING PRICE.		LABOR COST.		PERCENTAGE OF WAGES TO COST.	
	Drills.	Seeders.	Drills.	Seeders.	Drills.	Seeders.		Drills.	Seeders.	Drills.	Seeders.	Drills.	Seeders.
1865.....	\$70 00	\$70 00			Per cent.	Per cent.	1875.....	\$70 00	\$75 00	\$15 00	\$15 00	50	50
1870.....	75 00	75 00	\$15 00	\$15 00	40	40	1880.....	60 00 to 65 00	60 00 to 65 00	12 00	12 00	50	50

STATISTICS OF WAGES—AGRICULTURAL IMPLEMENTS.

9

I. W. Stoddard & Co., Dayton, Ohio.

Classes of employes.	Unit of payment.	DATES.					
		1880.	1879.	1878.	1877.	1876.	1875.
Foreman	Month..	\$30 00	\$30 00	\$33 00	\$33 00	\$30 00	\$30 00
Molder.....	Day ...	2 50	2 50	2 25	2 25	2 00	2 00
Cupolaman.....	do	2 50	2 50	2 25	2 25	2 00	2 00
Machinist, iron	do	2 00	1 80	1 80	1 80	1 75	1 75
Machinist, wood	do	2 00	2 00	1 75	1 75	1 50	1 50
Pattern-maker	do	2 50	2 50	2 25	2 25	2 00	2 00
Painter	do	1 00	1 00	1 00	1 50	1 50	1 35
Engineer.....	do	2 50	2 50	2 25	2 25	2 00	2 00
Blacksmith	do	1 75	1 75	1 00	1 00	1 50	1 50
Blacksmith's helper	do	1 25	1 25	1 10	1 10	1 00	1 00
Boy	do	1 00	00	75	75	00	00
Laborer	do	1 25	1 10	1 10	1 10	1 10	1 10

REMARKS.—There have been some opportunities for over-work at this establishment, which would increase wages about 5 per cent.

The prices of rakes, drills, and seeders in the preliminary statement are from these works.

Russell & Co., Massillon, Ohio.

Classes of employes.	Unit of payment.	DATES.																			
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.
Molder.....	Day ...	\$2 76	\$2 03	\$2 03	\$2 03	\$2 03	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 00	\$1 75	\$1 50
Painter.....	..do ...	1 75	1 50	1 50	1 50	1 50	1 00	1 75	2 25	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 00	1 75	1 50	1 50
Finisher.....	..do ...	1 85	1 85	1 85	1 85	1 85	1 00	2 00	2 10	2 10	2 10	2 25	2 25	2 50	2 50	2 50	2 00	2 00	1 87	1 63	1 02
Blacksmith.....	..do ...	1 75	1 07	1 07	1 07	1 07	1 70	1 80	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 10	2 00	1 75	1 50	1 50
Boy.....	..do ...	75	75	75	75	75	75	75	80	80	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laborer.....	..do ...	1 25	1 20	1 20	1 20	1 20	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 20	1 10	1 00	90

REMARKS.—These are the works that from 1842 to 1859 paid weekly; from 1860 to 1869, every two weeks; and from 1870 to 1880, monthly. Rakes, drills, seeding-machines, etc., are made. It is

estimated that the percentage of wages to cost in the entire production in 1870 was 12½ per cent.; in 1875, 15 per cent., and in 1880, 12½ per cent.

BELLS.

But one return relative to the manufacture of heavy bells, or those weighing 50 pounds and heavier, was received, that of Meneely & Co., West Troy, New York. Though these works were established in 1826, no record of wages prior to 1874 could be obtained.

From the return it appears there have been very few opportunities for extra earnings, and no allowances or deductions. The employés have been paid weekly and in cash. Since 1855 the hours of labor have been 10 per day from April to October, and 8 hours 20 minutes from October to April. The works have been in operation constantly since 1855.

There is an interesting statement as to the selling price of bells per pound from 1845 to 1880, as follows:

Year.	Highest.	Lowest.	Year.	Highest.	Lowest.	Year.	Highest.	Lowest.
1845.....	\$0 28	\$0 26	1860.....	\$0 35	\$0 30	1875.....	\$0 40	\$0 36
1850.....	30	28	1865.....	70	50	1880.....	33	27
1855.....	35	30	1870.....	40	37			

TABLE SHOWING WAGES PAID IN THE MANUFACTURE OF HEAVY BELLS.

Meneely & Co., West Troy, New York.

Classes of employés.	Unit of payment.	DATES.						
		1880.	1870.	1878.	1877.	1876.	1875.	1874.
Molder.....	Day	\$2 00	\$1 75	\$1 75	\$1 75	\$1 75	\$2 25	\$2 25
Molder's helper.....	do	1 50	1 25	1 25	1 25	1 25	1 75	1 75
Blacksmith.....	do	2 00	1 75	1 75	1 75	1 75	2 25	2 25
Blacksmith's helper.....	do	1 50	1 25	1 25	1 25	1 25	1 75	1 75
Machinist.....	do	2 00	2 00	2 00	2 00	2 00	2 40	2 40
Pattern-maker.....	do	2 00	2 00	2 00	2 00	2 00	2 40	2 40
Carpenter.....	do	2 00	2 00	2 00	2 00	2 00	2 50	2 50
Bell-mounter.....	do	2 00	1 75	1 75	1 75	1 75	2 25	2 25
Bell-mounter's helper.....	do	1 50	1 25	1 25	1 25	1 25	1 75	1 75
Laborer.....	do	1 25	1 00	1 00	1 00	1 00	1 50	1 50

BELTING.

Seven schedules were forwarded to as many manufacturers of leather belting, from whom 4 returns were received—1 each from New Hampshire, Connecticut, New York, and Missouri.

The number of classes of employes at these works is small, and includes, in some of the statements, tanners and curriers, as well as those engaged solely in the manufacture of belting.

The explanatory and supplementary statements in these schedules are not so complete as could be desired.

Extra earnings and deductions.—There seem to be constant opportunities for extra earnings from over-time in this industry. Where the rates for these extra earnings are given, it is stated that regular wages are paid for night work, and double price for Sunday work.

No allowances are reported, nor are the employes obliged to pay out any part of their wages for under-hands, tools, etc.

Payments.—At each establishment reporting, employes are paid in cash, store-orders not being used.

In one schedule the intervals of payment have been monthly; in all others, weekly.

Hours of labor are uniformly 10.

Regularity of employment.—Reports were received from 3 establishments as to the number of months worked per year, in each case the number being 12.

Relations of wages and labor to selling price and cost.—The character of the product in this industry is such, the variety of the goods manufactured so great, and there have been so many changes in both the character and variety of goods within the past few years, that it is impossible to give statements as to prices of product, labor cost, etc., with any degree of accuracy. The Page Belting Company states, however, that 9 per cent. of the total cost of its manufactures is labor, while another establishment puts the amount at 10 per cent.

Efficiency of labor and labor-saving machinery.—But little labor-saving machinery has been introduced into this industry. What is used has, according to statements made, lessened cost, resulted in the employment of more hands and no decrease of wages. There has been no increase in the efficiency of labor, except such as arises from experience.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Page Belting Company, Concord, New Hampshire.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Laborer	Day	\$1 10¢	\$1 10¢	\$1 10¢	\$1 20¢	\$1 37¢	\$1 55	\$1 02½	\$1 02½
Beam-hand	do	1 37½	1 20½	1 20½	1 20½	1 54½	1 75	1 75	1 75
Tanner	do	1 37½	1 20½	1 20½	1 33½	1 35½	1 75	1 75	1 75
Currier	do	1 45¢	1 45¢	1 45¢	1 58¢	1 00	1 05¢	1 05¢	1 70½
Belt-maker	do	1 45¢	1 25	1 10¢	1 25	1 33½	1 50	1 52½	1 58½

P. Jewell & Sons, Hartford, Connecticut.

Classes of employes.	Unit of payment.	DATA.																		
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.
Foreman	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$3 00	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 00	\$3 00	\$2 50	\$2 00	\$2 00	\$2 00
Skilled laborer	do	1 50	1 50	1 00	2 00	2 00	2 00	2 75	2 75	2 50	2 50	2 50	2 08½	2 25	2 25	2 25	2 10½	2 00	1 50	1 50
Unskilled laborer	do	1 00	1 00	1 00	1 00	1 50	1 83½	1 83½	1 83½	1 83½	2 00	1 83½	1 60½	1 60½	1 60½	1 60½	1 60½	1 33½	1 16½	1 00

STATISTICS OF WAGES—BELTING.

An establishment in the state of New York.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Carrier	Day	\$2 00	\$2 00	\$1 10 $\frac{3}{4}$	\$1 10 $\frac{3}{4}$	\$1 10 $\frac{3}{4}$	\$1 10 $\frac{3}{4}$	\$1 10 $\frac{3}{4}$
Belt-maker	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00

Shultz Belting Company, Saint Louis, Missouri.

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1880.	1879.	1878.	1877.			1880.	1879.	1878.	1877.
Belt-maker	Day	\$2 33 $\frac{1}{2}$	\$2 10 $\frac{3}{4}$	\$2 00	\$2 00	Sewer	Day	\$1 00	\$1 00	\$0 83 $\frac{1}{2}$	\$0 60 $\frac{3}{4}$
Beam-hand	do	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 75	1 75	Riveter	do	75	60 $\frac{3}{4}$	58 $\frac{1}{2}$	50
Yard-hand	do	1 60 $\frac{3}{4}$	1 50	1 50	1 50	Pegger	do	75	60 $\frac{3}{4}$	58 $\frac{1}{2}$	50
Table-hand	do	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	1 60 $\frac{3}{4}$	Engineer	do	2 00 $\frac{3}{4}$	2 00 $\frac{3}{4}$	2 00 $\frac{3}{4}$	2 00 $\frac{3}{4}$
Carrier	do	2 10 $\frac{3}{4}$	2 00	1 89 $\frac{1}{2}$	1 89 $\frac{1}{2}$	Laborer	do	1 50	1 50	1 50	1 50

BOOTS AND SHOES.

Eighty-nine schedules were sent to as many manufacturers of boots and shoes, from whom 21 returns were received. But 13, however, contained sufficient information to justify publication. Some of these returns are very complete, one from Massachusetts giving the wages paid to certain classes of employes back to 1851. The wages tables, as well as some of the explanatory and supplementary statements included in several of these schedules, are of special interest, in view of the fact that probably in no other industry has the change from hand labor to machine labor been so marked.

As a rule, it will be found that fluctuations in wages in the manufacture of boots and shoes have not been great. This industry is carried on, in many cases, in locations where there is comparatively little demand for labor in manufactories, agriculture being the chief industry. As a result, the rates of wages, being once fixed at these establishments, are seldom changed. There is no competition for labor, and it is secured at low rates. In those localities, however, where other manufacturing is carried on to a considerable extent and there is competition for labor, wages are higher and the fluctuations over a series of years are greater. For example, the changes in wages in the same series of years are greater in Massachusetts and Pennsylvania than they are in Ohio, Indiana, or Illinois. The two former are essentially manufacturing states. In the three latter, while manufacturing is carried on to a considerable extent in certain localities, it is not so general throughout the states as in Massachusetts or Pennsylvania. This statement will apply to other industries as well as to the manufacture of boots and shoes.

Extra earnings or deductions.—The returns received give but scant data for arriving at a conclusion regarding the prevalence of opportunities for extra earnings in this industry. During certain seasons of great demand, opportunities for extra earnings from over-time are constant at some establishments. These would increase the earnings of labor slightly, say in some cases \$2 a week, in others 10 per cent.

No allowances are reported, and therefore there would be no increase in the value of wages from this source.

In most instances piece workmen are obliged to furnish their own kit of tools. The expense of these is very small, no establishment placing it higher than 1 per cent. of the wages earned by workmen furnishing the tools; most returns estimate its value as low as one-tenth of 1 per cent.

Payments.—In every instance the reports show that the workmen are paid in cash. One establishment reports that it formerly used the store-order system, but abandoned it in 1869, better workmen being secured by paying cash, the cash system, too, giving better satisfaction to all concerned.

The usual interval of payment is weekly, though 3 of the 13 establishments paid every two weeks, and 1 monthly. One of the establishments paying every two weeks, formerly paid weekly, and the establishment now paying monthly paid weekly from 1865 to 1870. This establishment makes a very interesting statement as to its method of payment in its early history. From 1830 to 1845 it paid in merchandise, on call, settling with its employes at the end of each six months, and paying what balance might be due in cash. From 1850 to 1855 this practice was abandoned for all-cash payments at one of the works situated in a large town, but at works in a small town, part cash and part store-orders continued to be paid. Since 1855 store-orders have been entirely abandoned. Where store-orders were used the proprietors of the store paid the manufacturer a commission on all orders drawn on them. The result was that the employes had to pay a high price for goods, and the best workmen sought employment where cash was paid. Similar cases are frequently reported in the schedules received.

The following table shows the interval of payment at the 13 boot and shoe establishments from which reports were received:

Interval.	1880.	1875.	1870.	1865.	1860.	1855.	1850.	1845.	1840.
Weekly.....	9	10	7	4	2	1	1	1	1
Semi-monthly.....	3	2	2	2	2	1	1	.....	.....
Monthly.....	1	1	1	.....	1	.....	.....	.....	.....
On application.....	.....	.....	.....	.....	.....	1	1	.....	.....

Hours of labor.—With scarcely an exception the hours of labor since 1860 have been 10. In two cases, beginning with 1865, a few classes have been employed but 9 hours. There seems to be nearly a universal approval of the 10-hour system by the employers in this industry, the belief being frequently expressed that a

reduction in hours below 10 would not promote the health, discipline, or morals of the workmen, while an increase beyond 10 would be harmful to all this. Quite a number of manufacturers also state their opposition to over-time. At the establishment in Massachusetts whose figures go back to 1851, the hours were reduced from 11½ to 10 in 1860. This manufacturer reports that the reduction decreased production about 6 per cent. He also believes that a reduction to 9 hours would not lessen production materially, and would improve both the habits and the health of employes. He, however, would not recommend 8 hours for a day's work.

Regularity of employment.—The reports from the establishments whose returns were tabulated showed remarkable regularity of employment, but few returns showing the works to be in operation less than 11 months in the year, while most were employed the whole time. It is evident, however, in many cases that while some parts of the establishment may have been kept in operation the whole or the greater part of the year, there were many suspensions of employes during the year, so that this statement can be regarded only as indicating that the different establishments in some of their departments, not in all, were kept in operation the whole year. It is a well-known fact, especially in midsummer and midwinter, when demand is small, or between the changes from the heavy goods of one season to the light goods of another, that the force of employes at many establishments is greatly reduced, frequently from a third to a half.

Relation of wages and labor to selling price and cost.—In the reports of Messrs. Falley & Hoes, of Indiana, and of the Massachusetts return several times referred to, some interesting statements are made as to the prices of product, and their relations to wages and cost. The Indiana return gives prices for men's calf and kip boots; the Massachusetts return for shoes. These tables are given in full.

Table showing prices and cost of shoes per pair in Massachusetts.

Year.	AVERAGE PRICE AT WORKS.			COST OF LABOR TO UNIT OF PRODUCT.			PERCENTAGE OF WAGES TO COST.		
	First quality.	Second quality.	Third quality.	First quality.	Second quality.	Third quality.	First quality.	Second quality.	Third quality.
1855.....	\$1 00	\$0 80	\$0 65	\$0 30	\$0 25	\$0 22	Per cent. 84	Per cent. 82	Per cent. 88
1860.....	95	75	60	26	20	18	28	28	30
1865.....	1 75	1 60	1 25	35	32	32	23	22	25
1870.....	1 40	1 20	95	40	37	34	28	30	36
1875.....	1 30	1 00	70	24	23	23	18½	23	32
1880.....	1 10	85	.....	22	22	.....	18	24	.....

Table showing prices and cost of boots per dozen pairs in Indiana.

Year.	AVERAGE PRICE AT WORKS.		COST OF LABOR TO UNIT OF PRODUCT.		PERCENTAGE OF WAGES TO COST.	
	Men's calf boots.	Men's kip boots.	Men's calf boots.	Men's kip boots.	Men's calf boots.	Men's kip boots.
1865.....	\$72 00	\$60 00	\$17 00	\$15 00	Per cent. 33½	Per cent. 33½
1870.....	66 00	54 00	16 00	13 00	33½	33½
1875.....	54 00	45 00	10 50	9 00	25	25
1880.....	42 00	36 00	9 00	8 25	25	25

The quality of goods has greatly improved during the time covered. A first-quality shoe in 1855 would only rank as second quality in 1880. The improvement has not been in materials, but in workmanship.

The most important labor-saving machinery did not begin to affect cost until April, 1871. The great reduction in percentage of wages to cost in later years is due to this machinery.

Efficiency of labor and labor-saving machinery.—The reports show little change in the efficiency of labor, except such as always comes from education and experience. One manufacturer notes the increased efficiency growing out of the education of the taste of the workmen, resulting in the production of better and more tasteful goods. One manufacturer also notes a decrease in the efficiency of labor, arising from the employment of children at too early an age, and the assigning to them of employment that had been performed previously by older workmen. These children are less intelligent, have less experience, require more constant supervision, feel less responsibility, and consequently grow up less ambitious. The result is deterioration in the character not only of the work but of the workmen.

As has already been noticed, labor-saving machinery has been introduced to a large extent in this industry. The general effect of this may be stated in the words of one return: "There has been a reduction in cost and in number of employes per 100 cases produced of from 15 to 20 per cent., though, by reason of the growth of the industry, the actual number of employes has been increased." In cases where wages of old classes of workmen are affected, they have been raised. One manufacturer reports that the introduction of this machinery has greatly

facilitated system, and increased the uniformity and character of work. He also states that the use of machinery has compelled employes to apply themselves more closely to their work. Being paid by the piece, this has enabled them to make better wages. One manufacturer also states that the introduction of the sewing-machine into the manufacture of boots and shoes has greatly increased the number of women employed. This may be a correct statement, so far as it applies to the manufactories directly, but it is hardly a correct one if all the women employed under the old system are considered. Under the system in vogue before the introduction of the sewing-machine, employment was given to large numbers of women at their homes. This method has almost entirely ceased with the introduction of machinery. More women are employed in the works than formerly, but many less outside.

Wages in Great Britain.—The following statement as to the rates of wages paid in boot and shoe making in 1880 at Leicester, England, and in its neighborhood, is from the *Miscellaneous Statistics of the United Kingdom*, Part XI, and is inserted here for the purpose of comparison with our own tables. Leicester is the great centre of this industry in England:

Description of occupations.	Employés.	Rates of wages per week.	Hours of labor per week.	Description of occupations.	Employés.	Rates of wages per week.	Hours of labor per week.
Clickers	Men	\$6 53	50	Machine operators.....	Lads and boys	\$1 00 to \$3 63	50
Clickers	Lads and boys	2 08	50	Finishers	Men	α 7 20	50
Sewing-machinists, hand.....	Men	7 26	50	Finishers	Lads and boys	α 2 00 to 3 03	50
Sewing-machinists, hand.....	Women	3 03	50	Warehouse hands	Men	7 20	50
Sewing-machinists, hand.....	Girls	1 21	50	Warehouse hands	Lads and boys	1 21 to 2 00	50
Rough-stuff cutters	Men	5 08	50	Warehouse hands	Girls	1 57	50
Rough-stuff cutters	Lads and boys	1 04	50	Stock-room	Men	5 81	50
Riveters	Men	α 0 05	50	Counters	Youths	1 00	52½
Riveters	Lads and boys	α \$1 60 to 3 30	50	Counters.....	Girls	2 18	52½
Machine operators.....	Men	6 78	50				

α For piece-work.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Porter, Slessinger & Co., San Francisco, California.

Classes of employés.	Unit of payment.	DATES.					
		1880.	1870.	1878.	1877.	1870.	1875.
Overseer	Month..	\$45 50	\$45 50	\$45 50	\$45 50	\$45 50	\$45 50
Cutter	Day	3 00	3 00	3 00	3 00	3 00	3 00
Fitter	do	2 75	2 75	2 75	2 75	2 75	2 75
Laster	do	2 50	2 75	2 75	2 75	2 75	2 50
Treer	do	3 00	2 75	2 75	2 75	2 75	3 00
Bottomer	do	2 75	2 75	2 75	2 75	2 75	2 75
Finisher	do	3 00	3 00	3 00	3 00	3 00	3 00
McKay sewer and cabler.....	do	2 50	2 50	2 50	2 50	2 50	2 50
Packer	do	2 50	2 50	2 50	2 50	2 50	2 50

REMARKS.—These works make both boots and shoes.

Bottomers could have work 14 hours a day if so disposed. Some avail themselves of this opportunity, but the majority will not work over 9 hours a day, and consequently the rates of wages are not so high as they otherwise would be.

From 1830 to 1847 the interval of payment at these works was every 6 months. Store-orders were given when asked for, with settlements, as stated, every 6 months, the balance being paid in cash. From 1850 to 1855, in large towns, cash was paid, and in small towns part cash and part merchandise. From 1860 to 1865, monthly payments in cash; in 1865, weekly payments, and since 1870, cash either monthly or weekly as desired. Store-orders were used as late as 1869. Storekeepers formerly gave a commission on all orders drawn on them; factory hands had, in consequence, to pay high for their goods, and the best workmen sought employment where cash only was paid.

The rates named above are for a week of 65 hours previous to 1856; since then, 59 hours. Wages of piece-hands are reckoned at 54 hours per week, of women at 55 hours per week. The reduction

of time from 11½ to 10 hours per day for day help did not lessen production materially, perhaps 6 per cent. The opinion is expressed that a reduction to 9 hours would not lessen production over 5 per cent., and would improve both the habits and the health of the employés. Eight hours, however, are not advocated.

From 1851 to 1870 these works ran 12 months a year; since 1870, 11 months. Part of this stoppage was owing to strikes. The bottomers struck in April, 1869, for 10 per cent. advance, which was granted. They struck the next day for 5 per cent. more, which was refused. After a month's lost time the 5 per cent. was conceded.

The prices of product given in the preliminary statement as from the Massachusetts works are from this establishment.

A great deal of machinery has been introduced into these works. As at others, it is stated, however, that the most important labor-saving machinery did not begin to affect cost until April, 1871. This machinery has reduced the number of hands in proportion to output, but has not lessened wages. It is remarked that the introduction of the sewing-machine has greatly increased the number of women employed.

STATISTICS OF WAGES—BOOTS AND SHOES.

C. H. Fargo & Co., Chicago, Illinois.

Classes of employé's.	Unit of payment.	DATES.					
		1880.	1870.	1878.	1877.	1876.	1875.
Overseer	Month..	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00
Cutter	Day	2 50	2 50	2 50	2 50	2 50	2 50
Fitter	do	1 50	1 50	1 50	1 50	1 50	1 50
Laster	do	2 00	2 00	2 00	2 00	2 00	2 00
Trimmer	do	2 50	2 50	2 50	2 50	2 50	2 50
Burnisher	do	2 50	2 50	2 50	2 50	2 50	2 50
Edge-setter	do	2 50	2 50	2 50	2 50	2 50	2 50
Finisher	do	2 50	2 50	2 50	2 50	2 50	2 50
McKay sewer and cabler	do	2 50	2 50	2 50	2 50	2 50	2 50
Beater-out	do	1 50	1 50	1 50	1 50	1 50	1 50
Heel-nailor	do	2 25	2 25	2 25	2 25	2 25	2 25
Heel-shaver	do	2 50	2 50	2 50	2 50	2 50	2 50
Heel-blacker	do	50	50	50	50	50	50
Buffer on machine	do	2 00	2 00	2 00	2 00	2 00	2 00
Cleaner	do	1 50	1 50	1 50	1 50	1 50	1 50
Packer	do	2 00	2 00	2 00	2 00	2 00	2 00

REMARKS.—These works make both boots and shoes, were established in 1875, and give rates of wages for every year since. It will be noted, however, that there has been no change in rates in the 6 years covered by the schedule.

It is estimated that it costs workmen one-tenth of 1 per cent. of their wages for tools.

Payments are weekly and in cash.

In the busy season workmen are employed 10 to 11 hours a day, in dull times much less. It is stated that before shoemaking was systematized the hours of labor were very irregular, the workmen, who decided their own hours of labor, working some days only a few hours and then working far into the night for a few days to make up lost time. It was once customary for shoemakers to work on an average 15 hours a day.

The works have been in operation 11 months per year. As the goods made are what are known as "seasonable goods", there is a

falling off in demand between the seasons, which reduces the hours of labor.

There has been but one strike of any consequence since the Chicago factory of this firm was started. It grew out of a demand for higher wages, and lasted 2 months. In the end the workmen resumed at wages below those paid at the time of the strike.

The following statement is appended to the return regarding prices in 1880:

Nos. 1 to 5 children's sewed goat shoes	\$0 90
Nos. 4 to 7 children's sewed goat shoes	1 05
Nos. 8 to 10 children's sewed goat shoes	1 50
Nos. 11 to 13 children's sewed goat shoes	1 75

The first two grades are turned goods; the third and fourth are machine-sewed. It is stated that the labor cost is about one-third of the total cost.

Falley & Hoes, La Fayette, Indiana.

[Continued on next page.]

Classes of employé's.	Unit of payment.	DATES.										
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Overseer	Month..	\$125 00	\$125 00	\$125 00	\$125 00	\$110 00½	\$108 33½	\$100 00	\$100 00	\$133 33½	\$150 00	\$150 00
Cutter, upper	Day	3 10	3 00	2 75	3 00	3 00	3 00	3 00	3 50	3 50	3 50	3 50
Cutter, sole	do	2 10	2 00	2 00	2 00	2 00	2 00	2 00	2 50	2 50	2 50	2 75
Fitter	do	1 90	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 25	2 25
Laster	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00
Treer	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 25	2 25
Bottomer	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00
Trimmer	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00
Burnisher	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 15	2 15	2 15
Edge-setter	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Finisher	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 75	2 75	3 00	3 00
McKay sewer and cabler	do	2 25	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50
Channel opener and cementer	do	2 00	2 00	1 90	1 90	2 00	2 00	2 00	2 00	2 00	2 25	2 25
Beater-out	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Rand- and wedge-tacker	do	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50
Heel-nailor	do	1 75	1 75	1 75	1 75	2 00	1 90	1 90	1 90	2 00	2 00	2 00
Heel-shaver	do	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00
Heel-blacker	do	1 75	1 75	1 75	1 50	1 50	1 75	1 75	2 00	2 00	2 00	2 00
Edge-blacker	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00
Buffer on machine	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 25	2 25	2 25	2 25
Shank buffer and marker	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00
Seat-wheeler	do	2 00	2 00	2 00	2 00	2 00	1 75	1 75	2 00	2 00	2 00	2 25
Sack-liner and tyer-up	do	2 00	2 00	2 00	1 75	1 75	2 00	2 00	2 00	2 00	2 25	2 25
Cleaner	do	1 00	1 00	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Buttoner or lacer	do	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 25	1 25	1 25	1 25
Packer	do	1 50	1 50	1 50	1 50	1 50	1 75	1 75	2 00	2 00	2 00	1 75

STATISTICS OF WAGES—BOOTS AND SHOES

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Falley & Hoes, La Fayette, Indiana—Continued.

Classes of employés.	Unit of payment.	DATES.									
		1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.
Overseer.....	Month..	\$150 00	\$150 00	\$150 00	\$150 00	\$100 00	\$100 00	\$83 33½	\$83 33½	\$83 33½	\$60 00½
Cutter, upper.....	Day ..	3 75	3 75	3 75	4 00	4 00	4 00	4 00	4 00	4 00	4 00
Cutter, sole.....	do ..	2 75	2 75	2 75	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Fitter.....	do ..	2 25	2 25	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Laster.....	do ..				2 50						1 75
Troer.....	do ..				2 50						1 75
Bottomer.....	do ..				2 50						1 75
Trimmer.....	do ..				2 50						1 75
Burnisher.....	do ..				2 50						1 75
Edge-setter.....	do ..				2 50						1 75
Finisher.....	do ..				3 50						1 75
McKay sewer and cabler.....	do ..										1 75
Channel opener and cementer.....	do ..										1 75
Beater-out.....	do ..				2 25						1 50
Rand- and wedge-tacker.....	do ..				2 00						1 50
Heel-nailer.....	do ..				2 00						1 50
Heel-shaver.....	do ..				2 00						1 50
Heel-blacker.....	do ..				2 00						1 50
Edge-blacker.....	do ..				2 00						1 50
Buffer on machine.....	do ..				2 50						1 75
Shank buffer and marker.....	do ..				2 25						1 50
Seat-wheeler.....	do ..				2 25						1 50
Sack-liner and tyer-up.....	do ..				2 25						1 50
Cleaner.....	do ..				1 75						-1 00
Buttoner or lacer.....	do ..				1 75						1 00
Packer.....	do ..				1 75						1 00

REMARKS.—This establishment makes men's, boys', and youths' kip, calf, and grain boots, and women's, children's, and misses' goat, calf, and split (Polish) boots, shoes, and fine shoes.

For 6 months in the year about 2 hours per day over-time is made. This would increase the wages given in the above table about one-fifth. No extra time, however, was made during 1878.

Each workman finds his own kit of tools, but the expense would decrease his wages but slightly.

Payments are made on the 1st and 15th of each month in cash.

The hours of labor have been 10 daily for all classes.

The establishment has been in constant operation 12 months in the year since 1830, with few and unimportant stoppages.

It is stated in the return furnished by this establishment that there have been three strikes, the cause of each being the introduction of new machinery. In each case the workmen resumed work on the employers' terms.

The table given in the preliminary statement as to prices and cost of boots in Indiana is from these works.

The quality of goods made has greatly improved, and consequently the efficiency of the workmen must be greater than formerly.

Many kinds of machinery have been introduced. This has had a tendency to lessen cost and to decrease the number of employés to a given amount of work.

Dingley, Strout & Co., Auburn, Maine.

Classes of employés.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Overseer.....	Month..	\$80 00	\$70 00	\$72 00	\$72 00	\$68 00	\$68 00	\$64 00	\$64 00	\$64 00	\$64 00
Cutter.....	Day ..	2 00	2 00	1 90	1 90	1 80	1 80	1 75	1 75	1 75	1 75
Fitter.....	do ..	1 00	1 00	95	95	90	90	85	85	85	85
Laster.....	do ..	2 00	2 00	1 85	1 80	1 75	1 75	1 80	1 80	1 90	2 00
Troer.....	do ..	2 00	1 90	1 85	1 80	1 75	1 75	1 80	1 85	1 85	1 90
Bottomer.....	do ..	2 10	2 00	2 00	1 95	1 90	1 90	1 90	2 00	2 00	2 10
Trimmer.....	do ..	2 50	2 40	2 25	2 15	2 10	2 15	2 12	2 25	2 25	2 33
Burnisher.....	do ..	1 75	1 75	1 75	1 70	1 75	1 70	1 65	1 65	1 70	1 75
Edge-setter.....	do ..	2 50	2 40	2 25	2 20	2 20	2 10	2 10	2 00	2 25	2 50
Finisher.....	do ..	2 00	2 00	1 95	1 90	1 90	1 85	1 85	1 90	1 90	2 00
McKay sewer and cabler.....	do ..	2 75	2 75	2 65	2 60	2 60	2 50	2 45	2 40	2 40	2 50
Channel opener and cementer.....	do ..	2 20	2 20	2 10	2 15	2 15	2 10	2 10	2 10	2 00	2 00
Beater-out.....	do ..	1 95	1 90	1 90	1 90	1 85	1 95	1 95	1 90	1 90	2 00
Rand- and wedge-tacker.....	do ..	2 40	1 95	1 90	1 90	1 90	1 95	1 95	2 00	2 00	2 10
Heel-nailer.....	do ..	1 80	1 70	1 70	1 70	1 65	1 60	1 60	1 60	1 70	1 70
Heel-shaver.....	do ..	1 75	1 75	1 90	1 60	1 60	1 60	1 65	1 65	1 70	1 75
Heel-blacker.....	do ..	1 00	90	85	85	85	85	85	90	90	1 00
Edge-blacker.....	do ..	1 00	90	85	85	85	85	85	90	90	1 00
Buffer on machine.....	do ..	1 90	1 85	1 90	1 90	1 85	1 80	1 80	1 80	1 90	2 00
Shank buffer and marker.....	do ..	1 75	1 85	1 90	1 90	1 85	1 80	1 80	1 80	1 90	2 00
Seat-wheeler.....	do ..	1 50									
Sack-liner and tyer-up.....	do ..	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Cleaner.....	do ..	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Buttoner or lacer.....	do ..	75	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Packer.....	do ..	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARK.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here.

STATISTICS OF WAGES—BOOTS AND SHOES.

S. Newcomb & Co., Biddeford, Maine.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Oversoor.....	Month.....	\$66 66½	.....	\$75 00	\$75 00	\$75 00	\$83 33½	\$83 33½	.....	.....	.....	\$65 00	\$65 00	\$65 00	\$58 50	\$52 00
Cutter.....	Day.....	2 00	\$3 00	3 00	3 00	3 00	.....	3 00	.....	.....	.....	2 25	2 25	2 25	2 25	2 00
Fitter, female.....	do.....	1 25	1 50	1 50	1 50	1 50	.....	1 75	.....	.....	.....	2 00	2 00	2 00	1 50	1 50
Lastor.....	do.....	1 83	1 83	1 83	1 83	1 83	1 83	1 83	.....	.....	.....	2 25	2 25	2 25	1 75	1 75
Bottomer.....	do.....	2 00	2 50	2 50	2 50	2 50	3 00	3 00	.....	.....	.....	.....	.....	.....	.....	.....
Trimmer.....	do.....	2 33½	2 33½	2 33½	2 33½	2 33½	3 00	3 00	.....	.....	.....	2 75	2 75	2 50	2 00	2 00
Burnisher.....	do.....	2 00	2 00	2 00	2 00	2 00	2 33½	2 33½	.....	.....	.....	2 25	2 00	2 00	1 75	1 75
Edge-setter.....	do.....	2 00	2 00	2 00	2 00	2 00	2 33½	2 33½	.....	.....	.....	2 25	2 00	2 00	1 75	1 75
Finisher.....	do.....	2 33½	2 33½	2 50	2 50	2 50	3 00	3 00	.....	.....	.....	2 75	2 75	2 50	2 00	2 00
McKay sewer and cabler.....	do.....	2 25	2 25	2 25	2 25	2 25	2 50	2 50	.....	.....	.....	2 00	2 00	2 00	1 75	1 75
Channel opener and cementer.....	do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 00	2 00	2 00	1 75	1 75
Beater-out.....	do.....	2 00	2 00	2 00	2 00	2 00	2 33½	2 33½	.....	.....	.....	2 00	2 00	2 00	1 75	1 75
Sack-liner and tyer-up.....	do.....	1 50	1 50	1 25	1 25	.....	.....	1 50	.....	.....	.....	.....	.....	.....	.....	.....
Cleaner.....	do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 50	1 25	1 25	1 00	1 00

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Overscor.....	Month..	\$52 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cutter.....	Day....	2 00	.....	.....	.....	.....	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	.....
Fitter, female.....	do....	1 50	.....	.....	.....	.....	75	75	75	75	75	75	75	75	75	.....
Lastor.....	do....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bottomer.....	do....	.....	.....	.....	.....	.....	1 25	1 25	1 25	1 50	1 40	1 20	1 20	1 20	1 20	.....
Trimmer.....	do....	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Burnisher.....	do....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edge-setter.....	do....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finisher.....	do....	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McKay sower and cabler.....	do....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Channel opener and cementor.....	do....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beater-out.....	do....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sack-liner and tyer-up.....	do....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleaner.....	do....	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

REMARKS.—These works make women's, misses', and children's shoes. They were established in 1852, and rates of wages for certain classes of labor are given from that date.

Payments are every two weeks in cash.

All classes of labor, except bottomers, work 10 hours a day. From 1855 to 1869 bottomers also worked 10 hours a day; since that time, 9 hours.

These works have run constantly since they were started. In July and January, however, when demand is small, the force is usually reduced about one-half.

It is stated that the labor cost of women's shoes, no distinction being made as to grade, is 75 cents per pair. This is 33½ per cent. of the total cost.

The constant improvement in quality of work is unquestionable. This grows out of the competition consequent upon the education of the taste of the workmen.

The following statement is given as to prices of product at this factory:

Year.	Women's French kid shoes, per pair.	Women's American kid shoes, per pair.	Children's kid shoes, per pair.
1870.....	\$4 50	\$3 50	\$1 00-2 00
1875.....	3 75	2 50	
1880.....	3 75	2 50	75-1 50

As in most other works, considerable labor-saving machinery has been introduced into this establishment. This has had the effect of decreasing the number of employes about 6 per cent.

STATISTICS OF WAGES—BOOTS AND SHOES.

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Clark, Perry & Co., Baltimore, Maryland.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Overseer.....	Month..	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$80 00	\$80 00
Cutter.....	Day....	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 50	2 50	2 50	2 50	2 50	2 50	2 25
Fitter.....	do.....	1 37½	1 37½	1 37½	1 37½	1 37½	1 37½	1 37½	1 25	1 25	1 25	1 25	1 25	1 25	1 25
		1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Laster.....	do.....	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Treer.....	do.....	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Trimmer.....	do.....	2 50					2 10½					2 50	2 05	2 05	2 05
Burnisher.....	do.....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 40	2 40	2 40
Edge-setter.....	do.....	3 00	3 00	3 00	3 00	3 00	3 00								
Finisher.....	do.....	3 00	3 00	3 00	3 00	3 00	3 00	2 05	2 05	2 05	2 05	2 05	2 05	2 05	2 05
McKay sewer and cabler.....	do.....	4 00	4 00	4 00	4 00	4 00	4 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00
Channel opener and cementer.....	do.....	00½	00½	00½	00½	00½	00½	00½	00½	00½	00½	00½	00½	00½	00½
Beater-out.....	do.....	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Rand- and wedge-tacker.....	do.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Heel-nailer.....	do.....	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Heel-shaver.....	do.....	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Heel-blacker, boy.....	do.....	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Edge-blacker, boy.....	do.....	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Buffer on machine.....	do.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Shank-buffer and marker.....	do.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Seat-wheeler.....	do.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Sack-liner and tyer-up.....	do.....	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Cleaner.....	do.....	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Buttoner or lacer.....	do.....	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Packer.....	do.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

Classes of employes.	Unit of payment.	DATES.																
		1860.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Overseer.....	Month..	\$80 00	\$72 00	\$72 00	\$64 00	\$64 00	\$60 00	\$60 00					\$60 00					\$60 00
Cutter.....	Day....	2 25	2 00	2 00	1 75	1 50	1 50	1 50					1 50					1 50
Fitter.....	do....	1 25 1 75	1 00 1 50	1 00 1 50	1 00 1 50	75 1 25	75 1 25	75 1 25					75 1 50					75 1 50
Laster.....	do....	2 25	2 25															
Treer.....	do....	1 75	1 50	1 50	1 50	1 25	1 25	1 25					1 25					1 25
Trimmer.....	do....	2 50	2 50															
Burnisher.....	do....	2 25	2 25															
Edge-setter.....	do....																	
Finisher.....	do....	2 50	2 50															
McKay sewer and cabler.....	do....	6 00	6 00															
Channel opener and cementer.....	do....	00½	00½															
Beater-out.....	do....	3 00	3 00															
Rand- and wedge-tacker.....	do....	1 50	1 50															
Heel-nailer.....	do....	3 00	3 00															
Heel-shaver.....	do....	1 75	1 75															
Heel-blacker, boy.....	do....	50	50															
Edge-blacker, boy.....	do....	50	50															
Buffer on machine.....	do....	1 50	1 50															
Shank-buffer and marker.....	do....	1 50	1 50															
Seat-wheeler.....	do....	1 50	1 50															
Sack-liner and tyer-up.....	do....	75	75															
Cleaner.....	do....	75	75															
Buttoner or lacer.....	do....	75	75	75	75	75	75	75										
Packer.....	do....	1 50	1 50	1 50	1 50	1 50	1 50	1 50					1 50					1 50

REMARKS.—This establishment makes both boots and shoes, and the tabulation, like the previous one, is interesting as showing the influence of the introduction of machinery upon the rates of wages.

During 4 months of the year, about 10 hours' extra time per week is made, with a proportionate increase in the pay, which has not been considered in making the above table. Trimmers furnish their own knives. The cost of these is estimated to be equal to one-sixth of 1 per cent. of their earnings.

The hours of labor of all classes at these works since 1842 have been 10. The opinion is expressed that a diminution in the hours of labor would not only increase cost, but would cause demoralization of employes.

The following are the selling prices of two grades of women's boots since 1865 :

Year.	Women's French kid buttoned boots, machine-sewed, per pair.	Women's goat buttoned boots, machine-sewed, per pair.
1865.....	\$5 00	\$2 75
1870.....	5 00	2 75
1875.....	4 50	2 50
1880.....	4 00	2 50

Clark, Perry & Co., Baltimore, Maryland—Continued.

From 1842 to 1860 these works were in operation 10 months a year, since that time 11 months; the idleness being caused by the usual change from spring to fall and from fall to spring styles.

It is stated that since the year 1842 the average percentage of wages to cost has been 33½. It will vary but slightly from this in any year.

It is noted that since the introduction of machinery there has been a gradual but marked increase in the efficiency of labor, due chiefly to experience.

Considerable machinery has been introduced. Regarding the McKay beeler, it is stated that 1 man and a boy can do the work of 5 heel-nailers. These machine nailers are operated by workmen who formerly did the same work by hand. Their wages average

about 33½ per cent. more than under the old system. The machine results in a saving of cost—notwithstanding a royalty of half a cent per pair—of 1 cent per pair to the manufacturer. Regarding machinery, the manufacturer states that its utility in the manufacture of shoes is not in saving the cost of production. It is employed because it facilitates system and uniformity of production; in other words, machinery does not materially change the relative percentage of cost of labor, but it enables the manufacturer to produce better work without increased cost. There is probably no article in common use concerning which the taste has grown more exacting than boots and shoes, and the requirements are such that they could not be made without greatly increased cost of labor, except by machinery.

Goodrich & Porter, Haverhill, Massachusetts.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Cutter.....	Day	\$2 35	\$2 08½	\$2 00	\$2 00	\$2 00	\$2 20½	\$2 20½	\$2 41½	\$2 50	\$2 50	\$2 50
Fitter	do	1 63½	1 75	1 75	1 60½	1 60½	1 76½	1 76½	1 96½	2 00	2 00	2 00
Laster	do	1 60½	1 60½	1 60½	2 00	2 33½	2 33½	2 50	3 00	3 00	2 60½	2 50
Trimmer	do	2 00	2 00	2 00	2 33½	2 33½	2 83½	3 00	3 50	3 60½	3 16½	2 83½
Edge-setter	do	1 60½	1 60½	1 60½	2 00	2 33½	2 33½	2 50	3 00	3 00	2 60½	2 50
Finisher	do	2 00	2 00	2 00	2 33½	2 33½	2 83½	3 00	3 50	3 60½	3 16½	2 83½
McKay sewer and cabler.....	do	3 00	3 00	3 33½	3 60½	3 60½	3 00½	4 16½	5 00	5 00	5 00	5 00
Beater-out	do	1 60½	1 60½	1 60½	2 00	2 00	2 33½	2 50	3 00	3 00	2 60½	2 50
Buttoner or lacer	do	1 33½	1 33½	1 41½	1 50	1 50	1 66½	1 66½	2 00	2 00	2 00	2 00
Packer	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	3 00	3 00	3 00	3 00

REMARKS.—The statement is made that this establishment manufactures ladies', misses', and children's machine- and hand-sewed boots, shoes, and slippers.

Certain classes of employes, chiefly cutters, cleaners, and packers, in the busy season are given over-work, which would increase their wages about 33½ per cent. It is estimated, however, that the enforced idleness at other seasons will make the above wages about the average earnings of the entire year.

These works average 10 months a year full time.

It is stated that the labor cost of misses' fine kid buttoned shoes, selling at \$2 a pair, is 50 cents per pair; that grain goat or buff laced boots, selling at \$1 25 to \$1 50 a pair, cost 33 cents for labor. The percentage of wages to total cost of the first class mentioned would be 27½ per cent.; of the second class, 32 per cent. These figures apply only to 1880.

Regarding labor-saving machinery and methods of work, it is stated that "machinery is not used in the bottoming-room in this establishment to the extent that it is in many other works. The product being mostly of a high grade, demanding a highly finished bottom, a good deal of style and considerable care in handling the upper, it has not been advantageous to adopt what is technically known as the 'string system'. The work is done by the 'team system', where the casting, beating, and trimming, edge-setting and finishing are done by 5 men around one bench, making on an average 42 pairs per day of 9 hours of very hard work and close application. We find in the string system that a workman can earn larger wages per day, but as a rule does not have as steady employment as in the hand-team system. The string system reduces the number of employes, and consequently the cost of the shoe, as the product per man is largely increased."

An establishment in Massachusetts.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Cutter.....	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 07	\$2 07	\$2 07	\$3 00	\$3 00	\$2 07	\$2 67	\$2 67
Fitter	do	1 50	1 50	1 75	1 75	2 00	2 00	2 00	2 07	2 07	2 07	2 07	2 07	2 00	2 00	2 00
Laster	do	2 00	1 75	1 50	1 75	1 75	2 00	2 25	2 50	3 00	3 00	3 00	3 00	3 00	3 00	3 25
Treer	do	4 00	3 75	3 75	3 00	2 00	2 50	2 75	3 50	4 00	4 50	3 75	3 50	3 50	3 00	2 75
Bottomer	do															
Trimmer	do	4 00	3 75	3 75	3 00	2 00	2 50	2 75	3 50	4 00	4 50	4 75	4 50	4 50	4 00	3 25
Burnisher	do	4 00	3 75	3 75	3 00	2 00	2 50	2 75	3 50	4 00	4 50	3 75	3 75	3 75	3 00	3 00
Edge-setter	do	2 50	2 25	1 50	1 50	1 75	2 25	2 75	3 50	4 00	4 50	4 75	4 50	4 50	4 00	3 25
Finisher	do	1 33½	1 33½	1 25	1 25	1 50	1 50	1 50	3 00	3 00	3 00	3 50	3 50	2 83½	2 83½	2 83½
Packer	do	2 00	1 75	1 75	1 75	1 75	2 00	2 00	2 25	2 50	2 75	2 75	2 75	2 75	2 50	2 50

An establishment in Massachusetts—Continued.

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Cutter.....	Day	\$2 00	\$2 00	\$1 75	\$1 75	\$1 33	\$1 33	\$1 33	\$1 33	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50
Fitter.....	do	1 25	1 25	1 00	1 00	50	50	50	50	50	50	50	50	50	50	50
Laster.....	do	3 00	3 00	2 25	2 25											
Treer.....	do	2 75	2 50	2 50	2 00	2 00	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Bottomer.....	do						1 00- 1 75	1 00- 1 75	1 00- 1 75	1 00- 2 00	1 00- 2 00	1 00- 2 00	1 00- 2 00	1 00- 2 00	1 00- 2 00	1 00- 2 00
Trimmer.....	do	3 25	2 75	2 50	2 00	2 00										
Burnisher.....	do	2 75	2 00													
Edge-setter.....	do	3 25	2 75	2 50	2 00	2 00										
Finisher.....	do	2 00	2 00	1 00½	1 00½	1 10½										
Packer.....	do	2 50	2 00	2 00	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

East New York Boot, Shoe & Leather Manufacturing Company, Albany, New York.

Classes of employes.	Unit of payment.	DATES.																	
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Mechanic.....	Day	\$3 33½				\$3 00						\$3 60½					\$4 00		
Journeyman.....	do	2 50				2 33½						2 00½					3 00		
Laborer.....	do	1 60½				1 50						2 00					2 33½		
Boy.....	do	83½				00½						1 00					1 00		
Forewoman.....	do	2 50				2 33½						2 50					2 00½		
Operator.....	do	1 33½				1 00						1 50					1 50		
Girl.....	do	60½				50						83½					83½		

REMARK.—The only statement of importance in this schedule is that the average labor cost of a pair of shoes for the year 1880 was 30 cents. This cost includes infants', children's, misses', and

women's shoes, infants' and children's predominating, and is stated to be from one-sixth to one-fourth of the total cost.

An establishment in the state of New York.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Cutter.....	Day	\$2 00	\$2 00	\$2 00	\$2 00	\$2 50	\$2 50	\$2 50	\$3 33½	\$3 33½	\$3 83½
Fitter.....	do	1 50	1 50	1 50	1 50	1 00½	1 00½	1 00½	2 00	2 00	2 00
Bottomer.....	do	2 00	2 00	2 00	2 00	2 33½	2 33½	2 33½	2 60½	2 60½	2 60½
Finisher.....	do	2 33½	2 33½	2 33½	2 33½	2 60½	2 60½	2 60½	2 60½	2 60½	2 60½

REMARKS.—Both boots and shoes are manufactured at this establishment.

The over-time usual at so many factories in the busy season is also made at this. It is estimated that this over-time would increase the wages about \$2 a week.

From 1870 to 1879 the establishment was operated 12 months a year; for the year ending June, 1880, but 6 months.

The following prices of shoes and boots, per pair, are the highest and lowest prices for which they are sold at this establishment:

Year.	Shoes.	Boots.
1870.....	\$1 25 to \$4 00	\$3 00 to \$4 00
1875.....	1 25 to 4 00	3 00 to 4 00
1880.....	1 25 to 4 75	2 50 to 5 50

It is stated that wages are 40 per cent. of the cost of shoes and 30 per cent. of the cost of boots.

Alter, Forwood & Co., Cincinnati, Ohio.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Cutter.....	Day	\$2 50	\$3 50	\$2 25	\$2 00	\$2 00	Burnisher.....	Day	\$1 75	\$1 75	\$1 75	\$2 00	\$1 90
Fitter.....	Per doz. boots.	1 50	1 50	1 50	1 50	1 75	Edge-setter.....	do	2 50	2 00	2 00	2 00	2 00
Laster.....	Day	1 75	1 75	1 75	1 75	1 75	Finisher.....	do	3 50	3 25	3 00	3 00	3 00
Treer.....	do	2 75	2 50	2 50	2 50	2 50	Heeler.....	do	2 00	2 00	2 00	2 00	2 00
Trimmer.....	do	2 25	2 25	2 25	2 25	2 25							

REMARK.—The only statement of interest in connection with this schedule, other than those given in the preliminary remarks, relates to prices of product and percentage of wages to cost. The labor cost of children's buttoned boots, selling at \$1 50 a pair, is 25

per cent. of the total cost; of misses' buttoned boots, selling at \$1 75 per pair, 30 per cent.; of women's buttoned boots, selling at \$2 25 per pair, 38 per cent.; and of men's boots, selling at \$4 50 per pair, 60 per cent.

STATISTICS OF WAGES—BOOTS AND SHOES.

Reid, Jones & Co., Columbus, Ohio.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Overseer.....	Month..	\$83 00	\$83 00	\$83 00	\$83 00	\$83 00	\$83 00	\$83 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$66 00	\$66 00	\$66 00
Cutter.....	Day	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 30	2 50	2 50	2 50	2 50
Fitter.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Laster.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Troer.....	do	2 00	2 00	2 00	2 00	2 10	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Bottomor.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Trimmer.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Burnisher.....	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Edge-setter.....	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Finisher.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
McKay sewer and cabler.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Channel opener and cementer.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Beater-out.....	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Cleaner.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARK:—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here.

John D. Lenz, Allentown, Pennsylvania.

Classes of employés.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Overseers (of different departments)	Month..	\$45 00- 67 50	\$45 00- 67 50	\$39 00- 58 40	\$30 00- 54 00	\$12 00- 63 00	\$18 00- 72 00	\$54 00- 81 00	\$60 00- 90 00	\$54 00- 78 00
Cutter	Day ...	1 50- 1 87½	1 50- 1 87½	1 30- 1 62½	1 20- 1 50	1 40- 1 75	1 60- 2 00	1 80- 2 25	2 00- 2 50	1 75- 2 25
Fitter	do ...	1 12½	1 12½	97½	90	1 05	1 20	1 35	1 50	1 33½
Laster	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 00
Troer	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 00
Bottomor	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 25
Trimmer, edge	do ...	2 62½	2 62½	2 27½	2 10	2 45	2 80	3 15	3 50	3 00
Burnisher, heel	do ...	1 50	1 50	1 30	1 20	1 40	1 60	1 80	2 00	1 75
Edge-setter	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 00
Finisher, bottom	do ...	2 62½	2 62½	2 27½	2 10	2 45	2 80	3 15	3 50	3 00
McKay sewer and cabler	do ...	2 62½	2 62½	2 27½	2 10	2 45	2 80	3 15	3 50	3 00
Channel opener and cementor	do ...	1 50	1 50	1 30	1 20	1 40	1 60	1 80	2 00	1 75
Beater-out	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 00
Heel-shaver	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 00
Heel-blacker, boy	do ...	50	45	40	35	35	30	30	25	25
Edge-blacker, boy	do ...	50	45	40	35	35	30	30	25	25
Buffer on machine	do ...	1 87½	1 87½	1 62½	1 50	1 75	2 00	2 25	2 50	2 00
Shank-buffer and marker	do ...	1 00	1 00	95	95	90	80	80	75	75
Buttoner or lacer	do ...	50	50	45	45	45	45	40	40	40
Packer	do ...	1 15	1 15	1 15	1 10	1 10	1 10	1 00	1 00	1 00

REMARKS.—These works make a general line of boots and shoes.
In 1870 and '75, employes were paid weekly; in 1880, semi-monthly.

The following statement as to prices of product and labor cost of boots and shoes per pair is given:

Year.	SELLING PRICES.								LABOR COST.							
	Women's lasting tip balmoral.	Women's pebble goat, buttoned.	Women's kid, buttoned.	Men's miner boots.	Men's plain kip boots.	Men's calf boots.	Men's kip bro-gans.	Men's split bro-gans.	Women's lasting tip balmoral.	Women's pebble goat, buttoned.	Women's kid, buttoned.	Men's miner boots.	Men's plain kip boots.	Men's calf boots.	Men's kip bro-gans.	Men's split bro-gans.
1870.....	\$2 35	\$2 75	\$2 75	\$4 00	\$4 00	\$4 25	\$2 00	\$1 75	\$0 45	\$0 45	\$0 45	\$0 50	\$0 50	\$0 50	\$0 40	\$0 35
1875.....	2 00	2 50	2 50	3 50	3 50	4 00	1 75	1 50	32	32	32	35	35	35	28	25
1880.....	1 75	2 25	2 25	3 00	3 00	3 75	1 50	1 25	26	26	26	30	30	30	24	21

BREWERIES AND DISTILLERIES.

Fifty-five schedules were forwarded to brewing and distilling establishments, of which but 14 were returned; only 10 of these are tabulated. Three of these 10 are from distilleries located one each in the states of Illinois, Kentucky, and New York. Seven are from breweries, 2 of which are located in Indiana, 2 in Kentucky, and 3 in Ohio. Unfortunately none of the great brewing and distilling establishments of the country are represented in these tables, though schedules were sent to the chief ones in various sections of the country. Some interesting facts, however, are shown in the returns received.

Extra earnings or deductions.—The opportunities for extra earnings in this industry are rare. The hours of labor in many cases, as will appear below, are very long, and the men are supposed to labor until the work of the day is finished, without reference to the number of hours employed; consequently over-time is a thing almost unknown.

There are no allowances, and employes are not obliged to pay out any part of their wages for tools, etc., except carpenters and coopers, who, as is the custom with this class of mechanics, furnish their own kit of tools.

Payments.—With a single exception the reports received state that the workmen are paid wholly in cash. One firm states that a small proportion of its wages are paid in store-orders upon their customers, the object being to retain the trade of these customers.

The usual interval of payment is weekly, there being but three exceptions to this; one establishment paying monthly and two stating that they pay on application.

Hours of labor.—Much of the labor in connection with the manufacture and delivery of the product of breweries is fatiguing and the hours of labor are long, and in respect to some employes is continued every day in the year without intermission, one report stating, "Workmen can not be wholly exempted from Sunday or holiday work in our business." Other schedules confirm this statement. The hours of labor of the classes of employes that are strictly brewing employes—meaning by this the brewers, cellarmen, wash-house men, maltsters, drivers, etc.—are in but one case given as less than 12 hours, the range being from 12 to 15½. Notwithstanding these long hours and the laboriousness of the occupation, the reports state that the work is healthful. In distilleries the average day's labor of all classes is 12 hours.

Regularity of employment.—The reports show that the breweries run with great regularity 11 to 12 months each year. The distilleries, however, are not operated with so great regularity. Since 1875, two of the three have run 12 months a year, one 9 months. The cause of the stoppage of one establishment is stated to have been "restrictive legislation, which had the effect of cutting off the exportation of distilled spirits".

Relation of wages and labor to selling price and cost.—The returns showing the relation of wages to prices and cost at distilleries are not at all satisfactory. It is evident in some cases that the prices given include the internal-revenue tax, while in others the tax is omitted. The returns that give the best evidence of being correct are to the effect that the selling price of high wines or alcohol, exclusive of tax, in 1880 was about 35 cents a gallon. The cost of labor to a unit of product varied from 1 to 1½ cent per gallon in the reports given, while the percentage of wages to cost is given in two returns as from 6 to 7 per cent.

STATISTICS OF WAGES—BREWERIES AND DISTILLERIES.

The statements regarding breweries are much more in detail, and are evidently made out with greater care. The following statement gives these relations at three establishments, one situated in Indiana, one in Kentucky, and one in Ohio :

Prices, labor cost, etc., in the manufacture of lager beer.

Year.	INDIANA.			KENTUCKY.			OHIO.		
	Price per barrel, including revenue stamps.	Cost of labor to unit of product.	Percentage of wages to cost.	Price per barrel, including revenue stamps.	Cost of labor to unit of product.	Percentage of wages to cost.	Price per barrel, including revenue stamps.	Cost of labor to unit of product.	Percentage of wages to cost.
1870.....	\$10 00	\$1 25	<i>Per cent.</i>			<i>Per cent.</i>	\$12 00	\$2 50	<i>Per cent.</i>
1871.....	10 00		.....	.....	.....	.....	.....	.....	.....
1872.....	10 00		10	.....	.....	.....	.....	.....	.....
1873.....	10 00		.....	.....	.....	.....	.....	.....	.....
1874.....	10 00		.....	.....	.....	.....	.....	.....	.....
1875.....	10 00	1 08½	10	\$10 00	\$1 00	14	10 00	2 00	.....
1876.....	10 00		.....	.....	.....	.....	.....	.....	.....
1877.....	9 60		.....	.....	.....	.....	.....	.....	.....
1878.....	8 50		.....	.....	.....	.....	.....	.....	.....
1879.....	8 00		.....	.....	.....	.....	.....	.....	.....
1880.....	7 50		10	8 00	1 00	14	8 00	1 50	21

Regarding the different items of cost, the return from the Ohio works makes the following statement as to the cost of lager beer per barrel:

2½ bushels malt	\$2 50
Ice	1 00
Revenue	1 00
Labor	1 50
Wear and tear	1 00
	7 00

Efficiency of labor and labor-saving machinery.—There has been no increase in the efficiency of labor in this industry, except such as arises from experience.

Some machinery, such as ice-machines, keg-washers, separators, elevators, and patent pumps, have been introduced, the effect of which has been the production of a better article and a reduction in the cost of production.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Newman & Bohrer, La Fayette, Indiana.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman	Month ..	\$150 00	\$150 00	\$150 00	\$133 33	\$150 00	\$100 00	\$130 00	\$100 00	\$100 00	\$100 00
Brewer	Day	1 34- 2 11	1 53- 2 11	1 53- 2 30	1 53- 2 30	1 34- 2 11	1 53- 2 30	1 53- 2 30	1 53- 2 30	1 34- 2 30	1 34- 1 92
Cellarman	do	2 11	2 30	2 60	2 60	2 60	2 88	2 88	3 07	3 07	2 50
Teamster	do	2 11	2 11	2 11	2 30	2 30	2 50	2 50	2 50	2 30	2 50
Book-keeper	do	2 60	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30

REMARKS.—These works were established in 1871. Rates of wages are given for every year since.

The statement is made that teamsters and brewers work every day in the year, from 3.30 a. m. to 7 p. m.; "neither Sundays nor holidays can be wholly exempted from work in our business".

The statement given under the head of "Indiana", in the remarks prefixed to these tables, is from this schedule. The total average cost of beer, not including losses from bad debts, for 1872, is stated to be \$7 80 per barrel; for 1875, \$6 47; and for 1880, \$5 84.

STATISTICS OF WAGES—BREWERIES AND DISTILLERIES.

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Frank Fehr, Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Foreman.....	Month..	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00
Cellarman	Day	2 60	2 60	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Wash-house man	do	2 11	2 11	2 11	2 11	2 11	2 11	2 11	2 11	2 11
Cooper.....	do	2 60	2 60	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Teamster.....	do	6 73	6 73	6 73	6 73	6 73	6 73	6 73	6 73	6 73
Watchman.....	do	2 60	2 60	2 00	2 00	2 00	2 00	2 00	2 00	2 00

REMARK.—No explanatory statements accompanied this report other than those given in the preliminary remarks.

Kentucky Distilling Company, Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.					1870.	1875.
		1881.	1880.	1879.	1878.	1877.		
Maltster.....	Day			\$1 33½	\$1 33½		\$2 00	\$2 00
Beer-runner	do	\$2 10½	\$1 00½	1 33½	1 00½	\$1 33½	1 88½	1 00½
Cooper.....	do	1 75					2 00	2 00
Watchman.....	do	1 50	1 33½	1 33½	1 33½	1 33½	1 50	1 50

REMARK.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here.

H. Mueller & Co., Cleveland, Ohio.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Foreman.....	Month..	\$125 00	\$100 00	\$83 33	\$83 33	\$83 33	\$100 00	\$100 00	\$100 00	\$100 00
Maltster.....	Day	1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 75	1 75
Teamster.....	do	1 02	1 02	1 02	1 53	1 53	1 53	1 02	1 02	1 02

REMARKS.—This establishment produces only barley malt, making no beer. As the same industry forms part of the brewing industry and is in other cases included in the returns of brewers, this table is inserted here.

Maltsters work from 4 or 5 a. m. to 5 or 6 p. m., but are not constantly employed during that time, the active working hours being

about 8 per day. These hours are stated to be for every day in the year.

It is remarked that from 1870 to 1880 the average selling price of malts per bushel, varying with the quality, was from 90 cents to \$1 35; the cost of labor was from 20 cents to 25 cents, and the percentage of wages to cost was 8½.

Born & Co., Columbus, Ohio.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Maltster.....	Day	\$2 11	\$2 11	\$1 02	\$1 02	\$1 02	\$1 02	\$1 02	\$1 02	\$2 11	\$2 11	\$2 30
Cellarman.....	do	2 30	2 30	1 02	1 02	1 02	1 02	1 02	1 02	2 11	2 11	2 30
Teamster.....	do	1 02	1 02	1 02	1 02	1 02	1 53	1 53	1 53	1 53	1 53	1 53
Laborer.....	do	1 73	1 73	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 73

Classes of employes.	Unit of payment.	DATES.										
		1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1850.
Maltster.....	Day	\$2 30	\$2 30	\$2 30	\$2 30	\$2 30	\$1 02	\$1 53	\$1 34	\$1 15	\$1 15	\$1 15
Cellarman.....	do	2 30	2 30	2 30	2 30	2 30	1 02	1 53	1 34	1 15	1 15	1 15
Teamster.....	do	1 53	1 73	1 73	1 73	1 73	1 53	1 34	1 15	00	00	00
Laborer.....	do	1 73	1 73	1 73	1 73	1 73	1 53	1 15	00	70	70	70

REMARK.—None of the explanatory statements accompanying this report are of importance except one, giving the prices of lager

beer since 1860. These are, per barrel, as follows: 1860, \$5; 1865, \$12; 1870, \$10; 1875, \$9; 1880, \$8.

STATISTICS OF WAGES—BREWERIES AND DISTILLERIES.

Coelestin Schwind, Dayton, Ohio.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Foreman	Month ..	\$115 00					\$75 00						\$70 00
Maltster	Day	2 50					1 73						1 84
Cellarman	do	2 50					1 73						1 63
Wash-house man	do	1 02					1 53						96
Teamster	do	2 50					2 30						1 92

REMARKS.—The hours of labor are stated to be from 12 to 15 a day at this brewery. The statement as to prices, etc., under the head of "Ohio", in the preliminary remarks, is from this brewery.

Zell, Schwabacher & Co., Peoria, Illinois.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Miller	Day	\$3 00	\$3 00	\$3 00	\$2 50	(a)	\$2 00	\$3 33½	\$2 10½	\$3 00	\$2 50	\$3 00	\$3 00	\$2 00½
Masher	do	1 50- 2 50	1 50- 2 13½	2 33½	2 00		1 66½	2 33½	1 83½	2 50	1 01½- 2 08½	1 83½	2 00	1 60½- 2 03½
Distiller	do	11 00½	10 00- 15 00	10 00- 15 00	10 00- 15 00		8 33½	8 33½			(b)	6 00	6 00	8 33½
Spirit-drawer	do	3 00	3 00	2 00½	3 00		2 70½	3 33½	2 50	3 00	2 50	3 00	2 50	2 25
Cooper	do	1 83½	1 66½	1 00½	1 00½		2 08½	2 50	(c)	1 04½	(c)	(c)	(c)	1 00½- 1 83½
Teamster	do	1 00½	1 50	1 00½	1 00½		1 00½	2 00	1 50	2 00	1 00½	1 00½	2 00	1 00½
Watchman	do	1 00½	1 50	1 50	1 00½		1 00½	2 00	1 00½	1 00½	d 1 71½	d 1 71½	1 00½	

a Distillery was burned in 1876.*b* Distiller was paid by the bushel in 1871.*c* Had no cooper in 1869, 1870, 1871, and 1873.*d* Watchman worked 7 days a week during 1870 and 1871.

REMARKS.—The hours of labor at this distillery are 10 a day for carpenters, coopers, clerks, spirit-drawers, and yard-hands, and 12 for all other employes.

It is stated that the cost of labor, per gallon of proof spirits at these works is, and has been since 1870, 1 cent, which is 7 per cent. of the cost.

Kentucky Distilling Company, Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.						
		1881.	1880.	1879.	1878.	1877.	1876.	1875.
Miller	Day	\$3 00	\$2 00	\$1 66½	\$2 00	\$2 50	\$2 00	\$2 00
Masher	do	1 50- 2 16½	1 16½- 1 83½	1 00- 1 00½	1 33½- 2 00	1 41½- 2 08½	1 50- 2 00	1 10½- 2 00
Cooper	do	1 75					2 00	2 00
Warehouseman	do	2 50	2 00	2 00	2 00	2 00	1 66½	1 25
Watchman	do	1 50	1 33½	1 33½	1 33½	1 33½	1 50	1 50

REMARKS.—The only statement of importance in this return is that the average price of sweet-mash whisky per gallon, exclusive of tax, since 1875 has been 35 to 40 cents, and of sour-mash, 40 to 50 cents. The percentage of wages to cost has been 6 to 7 per cent.

George & Thomas Farthing, Buffalo, New York.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Distiller	Day	\$3 33½	\$3 33½	\$3 33½	\$3 33½	\$3 33½	\$3 33½	\$3 33½
Laborer	do	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½

REMARKS.—The explanatory and supplemental statements accompanying the report from this establishment are not of sufficient importance to insert, excepting the one relating to prices, which is as follows:

Year.	High wines, per gallon.	French spirits, per gallon.	New whisky, per gallon.	Year.	High wines, per gallon.	French spirits, per gallon.	New whisky, per gallon.
1878.....	\$1 07	\$1 14	\$1 30	1880.....	\$1 09	\$1 15	\$1 30
1875.....	1 07	1 14	1 30				

BRICK-MAKING.

Great difficulty was experienced in securing the names of manufacturers who possessed and would be willing to furnish reliable information as to wages in this industry. Brick-making in many sections of the country is carried on upon a small scale and in a desultory way; the number of employes is small, and the subdivisions of labor are of little importance, and no record is kept of wages paid. In some cases, however, especially near large cities, the business of brick-making is an important one, and the industry is well organized. From such establishments rates of wages and statements of considerable interest have been obtained. Most of the returns received are from the northern states east of the Mississippi river. Thirty-one schedules were sent out, of which but 10 were returned, all of which were tabulated. The rates of wages given in some of these tables are quite complete for a number of classes, and cover a series of years. One, embracing only common labor, gives rates of wages from 1829; one each for a number of classes from 1858, 1863, and 1870, and two from 1860. Some of these schedules include rates of wages paid in clay-working other than the manufacture of bricks. Most of the statements are for the manufacture of red bricks; a few for fire-brick.

Labor in this industry is, as a rule, not highly paid. Burning, setting, and molding require some skill; the other employments require only unskilled labor.

Extra earnings or deductions.—Without exception the returns show frequent opportunities for extra earnings from over-time. Brick-yards, as a rule, are in operation only a portion of the year, and consequently the over-time can be made only at these busy seasons. This over-time increases the wages given in the table. Two manufacturers estimate the addition to earnings at 10 per cent., another places it from 25 to 50 per cent. Regular price is paid for over-time.

In most cases no allowances are reported. Where any are stated to be given, they are of but little moment. No deductions from the wages of employes on account of payments to under-hands or the purchase of tools, etc., are reported.

Payments.—Employes were paid in cash at all the works from which returns were received, except two. One reports that it pays its employes one-twenty-fifth in store-orders, and a second states that sometimes when employes desire part of their wages in advance, store-orders are given. One firm reports that they expect to resume payment in merchandise.

The interval of payment varies in different parts of the country. The following table shows what this interval is at the works reporting:

Interval.	1860.	1875.	1870.	1865.	1860.	1855.	1850.
Weekly	5	4	4	3	3	1	1
Semi-monthly.....	3	2	1	1	1	.....	.....
Monthly	4	3	2	2	2	.....	.....

Hours of labor.—Much of the work about brick-yards is piece-work, a certain number of bricks constituting a day's work. This gives rise to a great variation in the hours of labor, not only at different works in different parts of the country, but among the employes at the same works. The employes, not piece-workers, work on an average 10 hours a day. The burners, whose work requires constant attention, are generally divided into two gangs, each working a shift of 12 hours. The system of piece-work seems to operate advantageously in this industry. Changes to day work have not proved satisfactory. One manufacturer states that several times day work has been tried, but it was found that employes would not do as much work in 10 hours working by the day, as they did in 8½ hours working by the piece. As an offset to this greater output in the shorter hours when paid by the piece, it is stated that employes on piece-work in their endeavor to accomplish a large amount of work sometimes turn out an inferior product. Where hours of labor have been reduced in this industry, the uniform testimony is that fully as much work is done in shorter hours as in the long hours of some years ago, when the custom was to work from sun to sun.

STATISTICS OF WAGES—BRICK-MAKING.

The following table shows the number of hours per day worked by the various classes at the establishments from which returns were received:

Year.	HOURS OF LABOR PER DAY FOR ALL CLASSES.					HOURS OF LABOR PER DAY FOR CERTAIN CLASSES.		
						Burners.	Molders.	General laborers.
	8.	8½.	9.	10.	11.	12.	7.	10.
1850.....	1		1		1			
1855.....	1		1		1			
1860.....	1		1	2	1	1	1	1
1865.....	1	1	1	3	1	2	1	2
1870.....	1	1	1	3	1	2	1	2
1875.....	1	1	1	5	1	2	1	2
1880.....	1	1	1	5	1	2	1	2

Regularity of employment.—As a rule, brick-yards are operated but a portion of the year; unfavorable weather, both for making brick and for building, interferes with constant operation. This, however, is not uniformly true. The following table shows the number of months the works from which returns were received were in operation:

Years.	MONTHS.						
	6.	7.	8.	9.	10.	11.	12.
1840 to 1845.....			1				
1846 to 1850.....			1				
1851 to 1855.....	1		1				
1856 to 1860.....	1	2	1				1
1861 to 1865.....	1	3	1				1
1866 to 1870.....	1	4	1				2
1871 to 1875.....	2	3	1		2		2
1876 to 1880.....	2	3	1		2		2
1880.....	2	3	1		1		3

NOTE.—The above is correct to the nearest whole number of months, fractions of the month being disregarded.

Relation of wages and labor to selling price and cost.—The statements under this head are not so complete for all of the three items as could be desired. There are several statements giving information as to the prices of brick that are quite interesting, but unfortunately in no case are the items of cost of labor and percentage of wages to cost carried out for a number of years. One return gives this information for 1875 and 1880 concerning fire-brick, and several give statements as to the percentage of wages to cost. From these various statements the following tables are extracted:

Prices of brick per thousand at Saint Louis, Missouri.

Year.	Price per thousand.	Year.	Price per thousand.	Year.	Price per thousand.
1830.....	\$5 00	1850.....	\$6 50	1870.....	\$8 00
1835.....	6 00	1855.....	8 00	1875.....	8 00
1840.....	3 50	1860.....	6 00	1880.....	5 00
1845.....	5 00- 6 50	1865.....	4 00		

Prices of brick per thousand at Trenton, New Jersey.

Year.	Salmon brick.	Hard brick.	Pressed brick.	Paving brick.
1860.....	\$7 00	\$8 00	\$16 00	\$10 00
1865.....	7 00	8 00	16 00	10 00
1870.....	8 00	10 00	25 00	12 00
1875.....	6 50	8 00	20 00	10 00
1880.....	6 00	7 00	16 00	9 00

NOTE.—The prices at Trenton are for brick delivered; delivery charges are about 75 cents per thousand.

STATISTICS OF WAGES—BRICK-MAKING.

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Prices of fire-brick, and percentage of wages to cost, in Massachusetts.

Year.	Price per thousand.	Percentage of wages to cost.
1870.....	\$55 00	<i>Per cent.</i> 35
1875.....	55 00	30
1880.....	45 00	30

Prices of brick and cost of labor in New York.

Year.	PRICE PER THOUSAND.		LABOR COST PER THOUSAND.	
	Common brick.	Pressed brick.	Common brick.	Pressed brick.
1870.....	\$7 00	\$10 00	\$2 25	\$2 25
1875.....	6 00	15 00	2 25	2 25
1880.....	7 00	15 00	2 25	2 25

Prices of fire-brick, cost of labor, and percentage of wages to cost, in Cleveland, Ohio.

Year.	PRICE PER THOUSAND.			Labor cost per thousand.	PERCENTAGE OF WAGES TO COST.		
	Cheapest fire-brick.	Medium fire-brick.	Best fire-brick.		Cheapest fire-brick.	Medium fire-brick.	Best fire-brick.
1875.....	\$10 00	\$35 00	\$50 00	\$3 80	<i>Per cent.</i> 35	<i>Per cent.</i> 40	<i>Per cent.</i> 40
1880.....	10 00	30 00	42 00	5 45	35	40	40

Prices of brick and cost of labor in Pennsylvania.

Year.	PRICE PER THOUSAND.		LABOR COST PER THOUSAND.	
	Common brick.	Pressed brick.	Common brick.	Pressed brick.
1870.....	\$6 50	\$20 00—23 00	\$5 15	\$10 00
1875.....	5 50	10 00	4 25	10 00
1880.....	4 00	8 00	4 10	7 00

Efficiency of labor.—The general statement as to efficiency of labor is that there has been no increase worthy of mention.

Labor-saving machinery and improvements.—A number of works have introduced brick-machines and patent kilns. The latter have effected a considerable saving in fuel, permitting the use of an inferior quality, and have given a more uniform product with less inferior or waste brick. The introduction of the brick-machine and some other labor-saving machinery has resulted in a decrease in the price of product, a saving of labor, and a great increase in output. While a decrease, as a rule, in the number of employes in proportion to output has arisen from labor-saving machinery, there has been an increase in the actual number of men employed and no decrease in wages.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Ohio Valley Press Brick Company, Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.					
		1880.	1870.	1878.	1877.	1876.	1875.
Foreman	Day	\$1 02½	\$1 54	\$1 02½	\$1 02½	\$1 02½	\$1 02½
Molder	do	1 75	1 50	1 50	1 50	1 50	1 50
Offbearer	do	1 00	1 00	80	80	80	80
Pressman	do	2 88½	2 88½	2 88½	3 84½	3 84½	3 84½
Setter	do	2 00	1 50	1 50	2 00	2 00	2 00
Burner	do	2 00	2 00	2 00	2 00	2 00	2 00
Laborer	do	1 25	1 00	1 00	1 00	1 00	1 00

REMARK.—The only statement of interest in connection with this schedule other than those referred to in the general remarks is the opinion that "eight hours per day is sufficient for a day's work,

and that the country would gain by a decrease in hours from those now usually worked".

STATISTICS OF WAGES—BRICK-MAKING.

An establishment in Massachusetts.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Molder.....	Day....	\$1 73	\$1 40	\$1 73	\$1 53½	\$1 53½	\$1 73	\$1 92½	\$1 84½	\$1 92½
Burner.....	do....	2 38½	2 30½	2 30½	2 30½	2 50	2 82½	3 07½	3 15½	3 27
Finisher.....	do....	2 30½	1 84½	1 92½	1 65½	1 73	1 92½	2 50	2 50	2 61½
Setter.....	do....	1 27	1 15½	1 27	1 34½	1 46	1 53½	1 73	1 65½	1 73
Laborer.....	do....	1 27	1 11½	1 15½	1 27	1 27	1 34½	1 53½	1 53½	1 61½

REMARKS.—This establishment makes bricks from fire-clay for tiles and stove-linings.

Employment at works of this character is much more regular than at those making building-bricks. These works report having run

full time since 1865. The prices of fire-brick at the Massachusetts fire-brick works given in the preliminary statement are the prices at these works.

An establishment in Indiana.

Classes of employes.	Unit of payment.	DATES.																		
		1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Foreman.....	Day....	\$2 25	\$2 00	\$1 90	\$1 90	\$2 25	\$2 25	\$2 50	\$3 00	\$2 75	\$3 00	\$3 00	\$3 25	\$3 25	\$3 25	\$3 50	\$3 50	\$3 25	\$3 00	\$3 00
Pit-filler.....	do....	1 25	1 10	1 00	1 00	1 25	1 50	1 75	1 75	2 00	2 00	1 75	2 00	2 00	2 25	2 25	2 25	2 00	1 75	1 50
Temperer.....	do....	1 25	1 10	1 00	1 00	1 25	1 50	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 25	2 25	2 25	2 00	1 75	1 50
Mud-wheeler.....	do....	1 25	1 10	1 00	1 00	1 25	1 75	2 00	1 75	2 00	2 00	2 00	2 00	2 00	2 25	2 50	2 50	2 25	2 00	1 75
Molder.....	do....	1 75	1 50	1 25	1 75	2 00	2 50	2 50	2 75	3 00	3 00	3 00	3 00	3 00	3 25	3 25	3 25	3 00	2 50	2 25
Off-bearer.....	do....	1 25	1 00	1 00	1 00	1 25	1 25	1 50	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 50	1 25
Brick-setter.....	do....	1 50	1 40	1 25	1 25	1 25	1 50	1 75	1 90	2 50	2 50	2 75	2 75	2 75	3 00	3 00	2 50	2 25	1 75	1 65
Brick-wheeler.....	do....	1 25	1 15	1 00	1 00	1 00	1 25	1 50	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	1 75	1 50
Pitcher.....	do....	1 25	1 15	1 00	1 00	1 25	1 25	1 50	1 50	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	1 75	1 50	1 25
Clay-digger.....	Per 1,000	10	10	8	8	10	12	15	15	15	15	15	15	18	18	18	18	15	15	.....
Burner.....	Day....	2 25	2 00	1 87	1 75	2 25	2 50	3 00	2 75	2 50	2 50	2 50	2 75	3 00	3 00	2 50	2 50	2 25	2 25	2 00
Roustabout.....	do....	1 25	1 00	1 25	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 25	2 00	1 75	1 75	1 50
Teamster.....	do....	1 00	1 00	1 00	1 00	1 25	1 50	1 50	1 75	2 00	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 50	1 50	1 25
Brick-loader, boy.....	do....	50	50	50	50	50	50	75	75	65	60	60	75	65	75	75	75	75	75	65
Brick-edger, boy.....	do....	50	50	50	50	50	50	65	65	65	60	60	75	75	75	75	75	75	75	65
Boy.....	do....	50	50	50	50	50	50	65	75	65	50	50	50	60	65	65	50	50	50	50

REMARKS.—These works were established in 1863, and give rates of wages for quite a number of classes of labor from that date. All classes work by the day, but some, as molders, setters, etc., have a certain number of bricks as a "task" for a day's work. When this task is completed, work is over for the day.

As stated above, the work is principally task or piece-work, the task requiring an average of about 8½ hours per day. Day-work of a certain number of hours has several times been substituted for piece-work, but it was found that the workmen did less in 10 hours when working by the day than they did in 8½ when working by the piece. On the other hand, it was found that when payment was by the piece, the product, though greater in number, was inferior in quality by reason of the haste of the workmen to perform their task.

Since 1863 these works have averaged but 7 months in the year, the cause of irregularity being cold weather.

There have been frequent opportunities for extra earnings, which are not included in the earnings given in the table, and which it is estimated would increase these earnings about 10 per cent.

The following statement as to prices of brick per 1,000 is given:

Year.	Price.
1865.....	\$10 00
1870.....	9 50
1875.....	8 75
1880.....	5 75

Labor is estimated to be about 50 per cent. of the total cost of product.

A hot-air kiln for burning brick was introduced in 1878, resulting in a saving of about 20 per cent. in cost of fuel. The same quantity was consumed, but an inferior quality could be used.

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[Continued on next page.]

[illegible]

The Evens & Howard Fire-brick Company, Saint Louis, Missouri—Continued.

REMARKS.—These works were established about 1854, and produce fire-brick and tiles, gas-retorts, sewer-pipes, and similar goods.

The men at these works can make about 10 per cent. extra wages by over-time. About half of the employes take advantage of these opportunities. Over-time work is paid for at regular rates.

Since the establishment of these works the hours have been 10 a day for all classes.

These works have run the entire time since their establishment. About 3 months in the year, however, they are operated but 9 hours a day, allowing the men nine-tenths of an ordinary day's wages. In the winter the force is somewhat reduced.

Within the past 20 years the improvements in the machinery for grinding, tempering, and handling clay have been such that the works can now produce goods for about 25 per cent. less than prior to that time. For most of these improvements it is stated that the fire-brick industry is indebted to the manufacturers and mechanics of Ohio. There has been the similar reduction (25 per cent.) in the

number of men required to produce a given amount of brick, but in these works the aggregate number of men employed is greatly increased, the growth in the business having more than counter-balanced the reduction of labor growing out of improvements in machinery.

The following have been the prices of ordinary fire-brick for the years named:

Year.	Price.
1860.....	\$40 00
1865.....	50 00
1870.....	40 00
1875.....	30 00
1880.....	22 50- 25 00

W. S. Stamps, Saint Louis, Missouri.

Classes of employes.	Unit of payment.	DATES.																	
		1860.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Common laborer	Day ...	\$1 40	\$1 10	\$1 00	\$1 00	\$1 00	\$1 25	\$1 25	\$1 50	\$1 50	\$1 50	\$1 75	\$2 00	\$2 00	\$1 75	\$1 75	\$1 50	\$1 50	\$1 00

Classes of employes.	Unit of payment.	DATES.																	
		1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.	1849.	1848.	1847.	1846.	
Common laborer.....	Day	\$0 75	\$0 75	\$1 25	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 25	\$1 25	\$1 20	\$1 10	\$1 10	\$1 00	\$1 00	\$1 00	

Classes of employes.	Unit of payment.	DATES.																	
		1845.	1844.	1843.	1842.	1841.	1840.	1839.	1838.	1837.	1836.	1835.	1834.	1833.	1832.	1831.	1830.	1829.	
Common laborer.....	Day	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 50	\$1 75	\$1 75	\$1 75	\$1 50	\$1 25	\$1 15	\$1 00	\$1 00	\$1 00	\$0 87½- 1 00	

REMARKS.—These works were established in 1829, and rates of wages are given for common labor for each year since that date. Brick-molders, it is stated, get from 40 to 50 cents per day more than this common labor, and are paid only for the days they work, losing their pay for idle days when the weather is so bad that bricks can not be made.

A certain number of bricks constitutes a day's work or "task." There are frequent opportunities in good weather for over-work, both in making brick and in burning the kiln at night. This often amounts to half a day over-time a day, and in many cases it increased the wages given in the table as much as 25 per cent.

As is stated above, brick-makers work by the task, 3,000 bricks being considered a day's work. This requires from 6 to 7 hours. Work is usually begun at 5 o'clock in the morning, and the molders are through at from 11 to 12 o'clock at noon. They have, however, to put the bricks in the shed, which takes from three-quarters of an hour to an hour longer. This is done after 5 o'clock at night, so that the bricks will dry as much as possible. In the year 1839, 2,500 bricks constituted a day's task. This continued for about 10 years, when it was increased to 2,700, at which it remained until about 1850, when a day's work was increased to 3,000, which has continued to the present time with a few exceptions. When bricks are made in "threes", or 3 bricks in a mold, the task is 3,300, but it requires no more work to make 3,300 threes than 3,000 twos.

The following statement is made as to regularity of employment: "About one month of the time of brick-makers is required for dig-

ging the clay and getting the yards in order for making bricks, to which about 6 months are devoted. One month more is consumed in setting up and burning, which makes a total of about 8 months' employment in the year."

The following are given as the prices of ordinary brick per thousand for the years named:

Year.	Price.	Year.	Price.	Year.	Price.
1828.....	\$5 00	1840.....	\$3 50	1865.....	\$4 00
1829.....	5 00	1845.....	5 00-	1870.....	8 00
1830.....	5 00		0 50	1875.....	8 00
1835.....	6 00	1850.....	6 50	1880.....	5 00
1836.....	8 00-	1855.....	8 00		
	10 00	1860.....	6 00		

It is stated that in the years from 1829 to 1869 a great many attempts were made to produce bricks by machinery, but all failed. About 15 years ago the hydraulic dry-press was introduced in Saint Louis. Considerable difficulty was experienced in introducing it, but it finally proved successful. The result is a great saving of labor and increase in output, one machine producing 40,000 bricks per day. Several other machines have been introduced and are now working successfully, saving labor and making superior bricks; still it is remarked, "A great many yards are making by hand as they did in Philadelphia in William Penn's time."

STATISTICS OF WAGES—BRICK-MAKING.

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George E. Fell, Trenton, New Jersey.

Classes of employes.	Unit of payment.	DATES.										
		1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Burner	Day	\$3 00	\$2 50	\$2 50	\$2 50	\$2 50	\$3 00	\$3 00	\$3 50	\$3 50	\$3 50	\$3 50
Setter	do	2 50	2 25	2 25	2 25	2 25	2 75	3 00	3 50	3 50	3 25	3 25
Molder	do	1 75- 2 50	1 40- 1 75	1 40- 1 75	1 40- 1 75	1 50- 2 00	1 75- 2 50	1 75- 3 00	2 25- 3 50	2 25- 3 50	2 25- 3 00	2 25- 3 00
Wheeler and tosser	do	1 50	1 35	1 35	1 35	1 40	1 75	2 00	2 00	2 00	2 00	2 00
Pit-filler	do	1 75	1 00	1 00	1 00	1 00	1 75	2 00	2 25	2 25	2 25	2 25
Wheeler	do	1 40	1 30	1 30	1 30	1 30	1 40	1 50	1 75	1 75	1 75	1 75
Sorter	do	2 00	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00
Off-bearer	do	1 10	1 00	1 00	1 00	1 00	1 00	1 10	1 10	1 10	1 20	1 20
Teamster	do	1 50	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 75	1 75
Pressor	do	1 75	1 75	1 75	1 75	2 00	2 25	2 25	2 50	2 50	2 50	2 25
Carrier	do	1 10	1 00	1 00	1 00	1 00	1 00	1 00	1 15	1 15	1 15	1 25

Classes of employes.	Unit of payment.	DATES.										
		1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.
Burner	Day	\$3 50	\$3 50	\$3 50	\$3 00	\$3 00	\$2 50	\$1 02	\$1 02	\$1 02	\$1 02	\$1 02
Setter	do	3 00	3 00	3 00	2 75	2 75	2 50	1 02	1 02	1 02	1 02	1 02
Molder	do	2 25- 3 00	2 25- 3 50	2 50- 3 50	2 00- 2 50	2 00- 2 50	1 50- 2 00	1 25- 1 50	1 25- 1 50	1 25- 1 50	1 25- 1 50	1 25- 1 50
Wheeler and tosser	do	2 00	2 00	2 25	1 75	1 75	1 50	1 10	1 10	1 10	1 10	1 10
Pit-filler	do	2 00	2 00	2 25	2 00	2 00	1 50	1 25	1 25	1 25	1 25	1 25
Wheeler	do	1 75	1 50	1 75	1 50	1 50	1 25	1 10	1 10	1 10	1 10	1 10
Sorter	do	1 75	1 75	1 75	1 50	1 50	1 30	1 10	1 10	1 10	1 10	1 10
Off-bearer	do	1 20	1 10	1 00	1 00	1 00	85	07	60	60	60	00
Teamster	do	1 75	1 50	1 50	1 50	1 50	1 25	1 00	1 00	1 00	1 00	1 00
Pressor	do	2 50	2 50	3 00	2 25	1 75	1 50	1 25	1 25	1 25	1 25	1 25
Carrier	do	1 25	1 20	1 25	1 00	1 00	1 00	75	75	75	75	75

REMARKS.—The hours of labor at these works for the time covered by the tabulation have been 10 for all classes. Task-work prevails here as in other establishments.

These works have been operated but about 7 months a year, work beginning about April 1, and continuing until the last of October.

A few men are kept employed about the yard during the winter. These men earn about \$1 25 a day.

The table of prices of product at Trenton, New Jersey, in the general statement preceding the wages tables gives the prices prevailing at these works.

Brush Brothers, Buffalo, New York.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Molder	Day	\$2 50	\$2 25	\$2 25	\$2 50	\$2 75	\$2 75	\$3 25	\$3 25	\$3 25	\$3 25
Burner	do	2 00	1 02	1 02	1 02	1 75	2 00	2 50	2 75	2 50	2 50
Setter	do	2 00	1 02	1 02	1 02	1 75	2 00	2 50	2 75	2 50	2 50
Laborer	do	1 50	1 25	1 12	1 25	1 37	1 50	1 75	2 00	1 75	1 75

REMARKS.—There have been frequent opportunities for extra earnings at these works which are not included in the rates given in the table.

From 1851 to 1870 these works paid every week. A change was made in 1875 to every two weeks.

Up to 1860 store-orders were used in part. This did not give satisfaction to the men, and, as trade improved, the establishment could sell its product as readily for cash as for store pay, and consequently was not obliged to give its employes orders.

These works have been in operation only about 6 months a year.

The statement of prices of product and cost of labor in New York in the remarks prefaced to these tables refers to these works.

All employes work 11 hours in summer and 9 hours in winter. Formerly a day's work was from sunrise to sunset, but as much labor is done now for a day's work in the hours named as during the longer hours of the former time.

Machines are now worked partly by steam; formerly all were operated by hand. Patent kilns have been introduced, which save 50 per cent. in fuel and greatly improve the quality of the brick. As a result of this improvement, the output and cost have been increased, and the number of employes to a given number of brick has been decreased, but the actual number of employes, owing to the growth of the business, has not been decreased, nor has there been any reduction of wages growing out of the introduction of machinery.

STATISTICS OF WAGES—BRICK-MAKING.

Wright & Knauff, Cleveland, Ohio.

Classes of employes.	Unit of payment.	DATES.					
		1880.	1870.	1878.	1877.	1876.	1875.
Molder	Day		\$2 11½	\$1 02½	\$1 02½	\$1 78	\$1 73
Burner	do		1 02½	1 73	1 01½	1 50	1 50
Engineer	do		1 02½	1 84½	1 73	1 73	1 51
Laborer	do		1 25	1 25	1 15	1 25	1 25
Boy	do		1 05	1 00	1 00	1 00	1 00

REMARKS.—These works make fire-brick, and, as is the case with manufacture of red brick. The hours of labor are reported to be 10 all fire-brick works, employment is much more regular than in the a day.

A. Stolz, Kerrtown, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Overseer	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$3 00	\$3 00	\$3 00	\$3 00
Brick-molder	do	1 50	1 50	1 50	1 02½	1 75	2 00	2 00	2 50	2 50	2 50	2 50
Brick-setter	do	1 50	1 50	1 50	1 02½	1 75	2 00	2 00	2 50	2 50	2 50	2 50
Clay-temperer	do	1 50	1 50	1 50	1 50	1 50	1 75	1 75	2 00	2 25	2 25	2 50
Wheeler	do	1 00	1 00	1 00	1 00	1 00	1 25	1 25	1 25	1 37½	1 50	1 50
Common laborer	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 12½	1 25	1 50	1 50
Off-bearer	do	85	85	85	85	85	90	90	1 00	1 00	1 25	1 25
Boy	do	50	50	50	50	50	50	50	50	50	60	60
Teamster, with team	do	3 25	3 50	3 50	3 50	3 50	3 50	3 20	4 00	4 50	5 00.	5 00

REMARK.—No statement of any importance is given in connection with this table that is not included in the preliminary remarks, except that all classes are employed 10 hours a day every day in the week except Saturday, when they work 9 hours. These works have been in operation but about half of each year since 1867, the cause of idleness being chiefly unfavorable weather.

Amos Dotterer, Philadelphia, Pennsylvania.

Classes of employes.	Unit of pay- ment.	DATES.																				
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.
Foreman.....	Day...	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 25	\$3 20	\$3 00	\$3 00	\$2 87	\$2 25	\$2 25	\$1 02
Molder	do...	1 50- 2 25	1 25- 1 50	1 50- 2 00	1 50- 2 25	1 75- 2 25	1 75- 2 25	2 00- 2 50	2 00- 3 00	2 25- 3 25	2 25- 3 25	2 50- 3 50	2 50- 3 50	2 50- 4 00	2 25- 3 50	2 25- 3 00	2 00- 2 25	1 50- 2 00	1 25- 2 00	1 00- 1 50	1 00- 1 50	1 25- 1 50
Off-bearer	do...	1 80	1 15	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 00	1 00	75	75	75
Carrier-off	do...	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 25	1 25	1 12	1 25	1 12	1 00	1 00	75	75	02	02	02
Caver-up	do...	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Wheeler	do...	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	1 50	1 25	1 25	1 25	1 20	1 20
Presser	do...	1 75	1 50	1 75	2 00	2 00	2 25	2 50	2 75	3 00	3 25	3 25	2 50	3 00	2 50	2 25	1 62	1 50	1 40	1 25	1 50	1 50
Wheeler and tosser	do...	1 50	1 25	1 25	1 50	1 75	1 75	2 00	2 00	2 25	2 25	2 50	2 50	2 50	2 00	1 75	1 50	1 25	1 25	1 25	1 12	1 12
Setter	do...	2 25	1 75	2 00	2 25	2 25	2 25	2 50	3 00	3 25	3 25	3 50	3 50	4 00	3 50	3 25	3 00	2 25	2 00	1 50	1 50	1 75
Burner	do...	3 50	3 00	3 50	3 50	3 50	4 00	4 00	4 50	4 50	5 00	5 00	5 00	5 00	5 00	4 00	3 50	2 75	2 50	2 00	2 00	2 00
Carter	do...	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	1 50	1 50	1 25	1 12	1 00	1 00	1 00
Driver	do...	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	1 50	1 50	1 25	1 12	1 00	1 00	1 00
Laborer	do...	1 50	1 25	1 25	1 50	1 50	1 50	1 75	1 75	1 75	2 00	2 00	1 75	1 75	1 75	1 50	1 50	1 25	1 12	1 00	1 00	1 00
Engineer	do...	2 50	2 25	2 50	2 50	2 75	3 00	3 00	3 00	3 25	3 25	3 25	3 00	3 25	3 00	2 50	2 50	2 25	2 00	1 75	1 50	1 50
Watchman	do...	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 12	1 12	1 00	1 00
Press-sorter	do...	2 25	2 00	2 50	2 50	2 75	2 75	2 75	3 00	3 00	3 00	3 50	3 00	3 00	3 00	3 00	2 25	2 00	2 00	1 50	1 50	1 50

REMARKS.—This is a very interesting statement of the rates of wages in Philadelphia.

Brick-makers, as a general rule, prefer to begin work early in the morning, so as to be through with their day's work before afternoon. Mr. Dotterer, however, thinks that those of the employes who work regularly 10 hours are more healthy and capable of work than those who work in this manner. He states that men that work 10 hours a day are more steady, better workmen, and make better brick than those that get through their labor in 7 hours.

These works have been operated on an average 7 months a year since 1860. The irregularity is due to unfavorable weather, strikes, and over-production. During the idle seasons, however, some of the employes find work in digging clay.

At these works both hand-made and machine-made bricks are produced, but it is stated that machine-made bricks are not so good as those made by hand. The machine was put up in 1863-64,

owing to the scarcity of labor, and produces rough brick at a less cost and with less labor than by hand, but no reduction in rates of wages. With this machine 30,000 bricks a day can be produced with the work of 9 men, 5 boys, and an engineer.

The following statement as to the prices of brick per thousand in the yard at a Philadelphia establishment for the 20 years from 1860 to 1880, is given in the schedule:

Year.	Pressed brick.	Stretcher brick.	Paving brick.	Hard brick.	Salmon brick.	Octagon brick.
1860...	\$16 00	\$10 00	\$11 00	\$6 50	\$4 50	\$20 00
1865...	18 00		12 00	7 00	5 00	50 00
1870...	40 00	22 00	22 00	13 00	10 00	50 00
1875...	28 00	16 00	16 00	10 00	8 00	50 00
1880...	18 00	12 00	12 00	7 00	5 00	50 00

BRIDGE-BUILDING.

Twenty-eight schedules were sent to manufacturers of bridges in all parts of the country east of and including Kansas. But 2 returns were received—1 from Pennsylvania and 1 from Ohio—both from establishments making iron bridges, roofs, and iron work for buildings, and both among the most important works of the class in the country. The work at these establishments is properly classed as machine-shop work, but, as bridge-building is a special department of machinists' work, it is reported upon separately.

Extra earnings or deductions.—These two works report frequent opportunities for extra earnings from over-time, occurring at irregular intervals, according to the pressure of orders. At the Pennsylvania works most mechanics work piece-work. Their actual earnings average from 25 to 75 per cent. more than the rates given in the schedules. All extra earnings are included in the rates given in the Ohio table. There are no allowances, nor are employes obliged to pay out any of their wages for tools, materials, etc.

Payments.—Both establishments pay monthly in cash.

Hours of labor.—Ten hours constitute a regular day's work at both establishments. In regard to the increase of hours caused by over-work, one schedule states that, as a usual thing, employes do not like either an increase or a decrease in the hours of labor, preferring the regular day of 10 hours. Much of the work is heavy, and 10 hours' labor is a sufficient tax upon the strength of the worker. When over-time is made the men do not work to good advantage during the extra hours nor during the regular hours next day.

Regularity of employment.—Both of these establishments have worked full time, 12 months in the year, since 1870.

Relation of wages and labor to selling price and cost.—It will readily be seen that it is almost impossible, in an industry like the building of iron bridges, to give a statement regarding these points. It would, of course, be possible to take a certain bridge and give the contract price, the total cost of labor, and the percentage of wages to total cost, but the statement would only apply to that particular bridge. Two bridges are scarcely ever built alike and under the same conditions. The price is governed by fluctuations in the price of raw materials, distance from railroad station, depth and character of stream over which the bridge is built, and many items that will readily occur to one acquainted with the industry. Hence the price and cost of bridges weighing exactly the same vary greatly. One of the works reporting makes a very interesting statement on this point, as follows:

Our accounts are arranged to show as nearly as possible the cost upon each bridge, and from that we can judge very nearly the cost of similar bridges built under similar conditions:

1. The merchant and shape iron delivered in shops.
 2. The labor in shops on same.
 3. Its due proportion of running expenses.
 4. Its due proportion of office and general expenses.
 5. Its due proportion of agents' expenses in getting the contract, and on an indefinite number of contracts we did not get.
- The above costs added together give us our *free on board* (f. o. b.) cost of the bridge. To these have to be added—
6. Freight to place of erection.
 7. Lumber delivered at bridge site.
 8. Labor in putting up the bridge, including traveling expenses of our foreman.

We have a large labor-roll in putting up the bridge, of which we can not well give the aggregate, as we charge it against the particular bridge upon which it is incurred (item 8 above). The rate of wages we pay this labor is extremely variable (depending on section of the country, time of year, etc.), as it is hired at the place where the bridge is erected.

In getting contracts our agents are paid stated salaries and their traveling expenses to bridge lettings and other places throughout their territory. This cost forms a very large portion of the cost of bridges, etc., a cost which can not be averaged to any advantage.

Notwithstanding this difficulty, one of the returns states that "counting as cost the cost of every thing until the bridge is ready for travel, our labor account for the year 1879 in the shop was 15.2 per cent. of the whole cost".

Efficiency of labor.—One return states that there has been no noticeable change in the efficiency of labor; the other, that there has been an increase, arising from the introduction of the piece-work system in 1878.

Labor-saving machinery and improvement.—Considerable labor-saving machinery has also been introduced into these works, more in the way of special tools for doing special work in connection with iron. It may also be said that many labor-saving appliances that can hardly be called machines have been introduced, which have permitted of the employment of less skilled labor than would otherwise have been possible. It is also true that in this industry, as will be shown under the head of "machine-shops", men have become skilled in producing certain articles by being occupied steadily upon that one line of work.

STATISTICS OF WAGES—BRIDGE-BUILDING.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman	Day	\$3 35	\$3 25	\$3 35	\$3 50	\$3 80	\$3 80	\$4 00	\$4 00	\$4 00	\$4 00
Machinist, 1st class (a)	do	2 35	2 00	1 00	1 00	2 00	2 25	2 25	2 50	2 50	2 75
Machinist, 2d class	do	1 75	1 65	1 50	1 50	1 75	1 80	1 80	1 50	1 50	1 50
Blacksmith	do	2 50	2 30	2 25	2 25	2 50	2 50	2 02½	2 75	3 00	3 00
Blacksmith's helper	do	1 35	1 25	1 25	1 40	1 45	1 50	1 60	1 75	1 75	1 75
Skilled laborer	do	1 05	1 85	1 75	1 80	2 00	2 00	2 00	2 25	2 25	2 00
Common laborer	do	1 25	1 25	1 25	1 40	1 50	1 50	1 60	1 75	1 70	1 02½
Boy	do	00	00	75	75	65	00	75	75	75	75

a Two rates are given under machinist; one for highly skilled workmen and one for what may be termed "second-class" machinists—young, but possessed of experience in the work, having grown up in the shop.

An establishment in Pennsylvania.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Blacksmith	Day	\$2 25	\$2 20	\$2 10	\$2 10	\$2 25	\$2 30	\$2 35	\$2 45	\$2 55	\$2 50
Machinist	do	2 10	2 00	1 80	2 10	2 20	2 25	2 25	2 50	2 45	2 35
Riveter	do	1 00	1 50	1 40	1 50	1 80	2 00	2 00	2 25	2 25	2 15
Pattern-maker	do	3 20	2 10	3 10	2 25	2 50	2 50	2 50	2 25	2 05	2 00
Engineer	do	2 50	2 20	2 20	2 20	2 30	2 50	2 50	2 50	2 50	2 50
Laborer	do	1 30	1 30	1 30	1 30	1 40	1 50	1 50	1 00	1 05	1 00

THE CANNING INDUSTRY.

No special effort was made to secure statements of the wages paid in the canning industry. My assistants, however, while seeking other information, secured 2 schedules—1 from Maine and 1 from New York—which are of sufficient interest to demand publication.

From a Baltimore packer the following statement was received:

Classes of employes.	Unit of payment.	1871.	1877.	Average number of months employed.
Foreman	Week...	\$18 00	\$17 00	12
Raw-wheeler	do	12 00	.....	7
Shell-wheeler	do	10 00	9 00	7
Laborer.....	do	10 00	9 00	7
Oyster-opener	Gallon ..	20	15	7
Fruit-preparer (a).....	Day	1 00	87	4
Can-capper	Week ..	18 00	15 00	11
Can-packer (a).....	do	5 00	.....	4

a Women or girls.

At 15 cents a gallon openers can average \$14 00 a week during 3 months, and \$8 33 during 4 months.

This industry, it is evident from its character, can be carried on only at certain seasons of the year.

Extra earnings or deductions.—It will also be evident that the opportunities for over-time, as well as the number of hours of employment per day, must vary considerably in this industry. Fruits or vegetables must be canned as soon as ripe, and the state of the weather determines in a great measure the amount that will come in at a given time. This, of course, does not apply to so great an extent to the canning of lobster, fish, and meats. These opportunities for extra time would increase the actual earnings of the employes considerably, and have not been included in the wages statements.

Payments.—The employes at the works are paid in cash, the works in Maine paying weekly and the one in New York every two weeks.

Hours of labor.—The schedule from Maine gives the hours of labor of overseers constantly since 1862 at 10 to 15; can-makers and girls, 8 to 10, and all others, 10 to 12. The New York return puts the hours of labor of all classes since 1873 at 10 hours.

Regularity of employment.—Both returns give the number of months the works were in operation during each year as 8, though it is stated that can-makers and tinsmiths work the whole year.

Relation of wages and labor to selling price and cost.—The information under this head, except as to price of product, is very meager. The New York establishment, which cans fruits and vegetables, places the percentage of wages to cost of the total production at 25 per cent. Both schedules, however, contain tables as to the prices of product, which are given below:

Prices of canned goods at a Maine cannery, 1866 to 1880.

Years.	Corn, per dozen $\frac{1}{2}$ -pound cans.	Lobster, per dozen 1-pound cans.	Beef, per dozen $\frac{1}{2}$ -pound cans.	Mutton, per dozen $\frac{1}{2}$ -pound cans.	Turkey, per dozen $\frac{1}{2}$ -pound cans.	Chicken, per dozen $\frac{1}{2}$ -pound cans.
1866 to 1868	\$3 00	\$2 25	\$4 00	\$4 00	\$5 00	\$5 00
1868 to 1873	2 50	2 00	3 00	3 00	4 00	4 00
1873 to 1876	1 75	1 75	2 50	2 50	3 00	3 00
1876 to 1880	1 25	1 00	1 80	1 80	2 50	2 50

Prices of canned vegetables at a New York cannery, 1873 to 1880, per case of 2 dozen cans.

Year.	Sweet corn.	Tomatoes.	Pease.	Peaches.	Strawberries.	Plums.
1873.....	\$6 00	\$3 50	\$4 00	\$5 00	\$5 50	\$4 50
1875	5 00	2 50	3 00	4 00	4 50	3 50
1880.....	2 50	2 30	4 00	3 50	5 00	3 00

Efficiency of labor and labor-saving machinery.—The only increase in the efficiency of labor is that arising from experience. Considerable labor-saving machinery seems to have been introduced into this industry, such as corn-shaving and tomato filling and capping machines, the effect of which seems to have been an increase of output and a decrease in cost of manufacture. The statement, however, is made that the number of employes has not been decreased as the result.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Davis, Baxter & Co., Portland, Maine.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Overseer.....	Day ...	\$3 00	\$3 00	\$5 00	\$3 33½	\$3 33½	\$3 33½	\$4 10½	\$4 10½	\$4 10½	\$4 10½	\$4 10½	\$4 10½	\$4 10½	\$4 10½	\$4 10½
Cann-maker.....	do ...	1 00½	1 00½	2 00	2 10½	2 10½	2 50	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½
Sealer	do ...	1 60½	1 60½	1 60½	2 10½	2 10½	2 50	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Laborer.....	do ...	1 25	1 25	1 33½	1 50	1 50	1 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Girl.....	do ...	66½	66½	66½	75	75	75	83½	83½	83½	83½	83½	83½	83½	83½	83½

Erie Preserving Company, Buffalo, New York.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1870.	1878.	1877.	1876.	1875.	1874.
Tinsmith.....	Day ...	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 25
Capper.....	do ...	1 25	1 25	1 25	1 25	1 25	1 25	1 50
Labeler	do ...	75	75	75	75	75	75	1 00
Packer.....	do ...	60	50	50	60	60	60	75

CIGARS AND TOBACCO.

One hundred and sixty-six schedules were sent to as many manufacturers of cigars and tobacco, from whom but 32 returns were received, of which only 22 are tabulated. These returns are classified under three different heads, which, with the number of tabulations under each, are as follows:

1. Manufacturers of cigars and cigarettes	13
2. Manufacturers of fine-cut or smoking tobacco	10
3. Manufacturers of plug tobacco	6

As several of the returns give rates of wages for more than one of these classes, the total number of tabulations is greater than the number of returns received.

It will be noted that in several returns, chiefly from the South, there has been little or no change in wages in a series of years.

It was impossible to make the unit of payment in all cases the same. Some works paid by the hundred and others by the thousand, while still others paid by the day. A common unit could easily be reached where the payments were by the hundred or thousand, but as between these and the day payments no common unit could be found. Care must be taken, therefore, in comparing the tables, to see that the comparisons are based on the same unit.

Extra earnings or deductions.—There appear to be some opportunities for over-time in all three divisions of this industry, growing out of increased demand at times. For this over-work regular wages are paid, but it seems that the employés, as a rule, object to over-time, and in the large centers will not permit it, except in rare cases.

There are no allowances, except that the employés are in some cases allowed tobacco and cigars free for their own use.

Cigar-makers are obliged to furnish a rolling-board and cutting-knife. The cost of these is quite small, however, and if considered would reduce the wages but a very small per cent. Tobacco workers are not obliged to furnish any tools or pay out any part of their wages for help.

Payments.—With but one exception employés at the establishments reporting are paid in cash. At this factory, which is in North Carolina, 10 per cent. is paid in merchandise.

With but three exceptions, where the intervals of payment are every two weeks, employés are paid weekly.

At one of the establishments in the South employing colored labor, a large portion of the wages is paid in provisions, fire-wood, etc. When payments are in cash the rates are generally much lower than when in merchandise. The cost of living is very cheap, less clothing and shelter being required than in the North, and farm products selling at a very low rate. At most of the establishments in the southern states reporting, wages are generally paid in cash. It is found that if the men are allowed to take their pay in merchandise they are less economical, and more apt to overtrade.

Hours of labor.—It is somewhat difficult to arrive at the average hours of labor in this industry, for the reason that the men work by the piece. The general hours of work in cigar-shops seem to be from 8 to 10, and in fine-cut and plug tobacco factories, 10 hours.

Some of the statements and opinions expressed regarding hours of labor are of considerable interest. The general opinion advanced is that 10 hours is on the whole the best. One manufacturer states that he thinks 10 hours per day the most profitable to employers and employed. A less number of hours would decrease production, and would not benefit the employés either physically or morally, while longer hours would be injurious to the health of employés and unprofitable to the employer. This same manufacturer also gives it as his opinion that female help can do as much work in a series of years in 9 hours as in 10, and that the shorter hours would benefit them; as they would employ profitably to themselves the time thus gained. There seems to be also a decided opinion on the part of manufacturers against over-time work. One states that the product is superior when working regular hours to that turned out when working over-time or short hours. Another one states that over-time renders the employés less efficient during regular hours, and short hours in dull seasons tend to carelessness. Another employer states that in August and September, 1880, they tried the experiment of working two-thirds of their hands 3 hours over-time. This did not result in a corresponding increase in production, as the employés were tired out and unable to work well either during the regular hours or over-time.

Regularity of employment.—The establishments from which reports were received were operated with considerable regularity, as will appear from the table given below. Where there has been an irregularity, the reasons given are various. The California establishment, employing Chinamen, states that they are idle during February of each year, that being the New Year of their employes. In several instances the cause of irregularity is ascribed to the damaging effect of the agitation regarding internal-revenue taxes, while several report the irregularity as due to strikes and lockouts.

A great deal of the irregularity of employment at southern works grows out of the love of the colored employes for holidays. On Saturdays, at many works, not more than half a day is made, and on Mondays a similar loss of time is noted. The holiday season at the close and beginning of the year is a time of idleness and, among the religious portion, that of the camp- and bush-meeting.

The following table gives the number of months in the years named that the different works were operated:

Number of months per year works were in operation.	1880.	1876 to 1880.	1871 to 1875.	1866 to 1870.	1861 to 1865.	1856 to 1860.	1851 to 1855.	1846 to 1850.	1840 to 1845.
9	1	1	1	1	—	—	—	—	—
10	—	—	—	—	1	—	—	—	—
11	5	5	6	4	2	3	1	1	1
12	15	15	13	8	5	3	3	—	—

Relation of wages and labor to selling price and cost.—But few detailed statements of value and importance were made as to prices of product, labor cost, and percentage of wages to cost, and between those that were made there is a difficulty of comparison, growing out of the fact that some concerns included in cost the internal-revenue taxes, others omitting them. Some concerns also confound cost and selling price. The percentage of wages to cost of the different articles varies in the different returns, as follows: Cigars, 25 to 33 per cent.; cigarettes, 20 to 25 per cent.; plug tobacco, about 25 per cent.; and smoking and fine-cut tobacco, 30 to 35 per cent. In these statements the internal-revenue tax is included in cost. The following tables are the best of those received:

Table showing prices of cigars per thousand, labor cost, and percentage of wages to cost, in the District of Columbia.

Year.	Prices of product.	Cost of labor.	Percentage of wages to cost.
			<i>Per cent.</i>
1855.....	\$15 00	\$5 00	33½
1860.....	17 00	5 50	33
1865.....	56 00	15 50	27½
1870.....	51 00	14 00	27½
1875.....	45 00	10 25	20½
1880.....	43 00	9 00	21

Table showing prices of plug tobacco per pound, labor cost, and percentage of wages to cost, in Virginia.

Year.	Prices of product.	Cost of labor.	Percentage of wages to cost.
			<i>Per cent.</i>
1870.....	\$0 40 to \$1 00	\$0 10	25
1875.....	38 to 85	8	25
1880.....	30 to 75	7	25

Efficiency of labor.—In this industry there seems to have been little improvement in the efficiency of labor, except such as arises from experience.

A statement is made in a return from Richmond, Virginia, to the effect that prior to 1865, during which time the employes were slaves, "piece-work" prevailed. All over-work was paid for, these extra earnings going to the workmen. By over-work these slaves in many cases made as much per week for themselves as the very same persons, now free and receiving the same rates, earn for the whole of their labor.

Labor-saving machinery and improvements.—Some little machinery has been introduced into the manufacture of cigars, such as molds and presses for fillers, the result of which has been decreased cost of production without decreasing the number of employes or rates of wages. They have also permitted of the employment of less skilled labor. In the manufacture of tobacco some cutting-machines and various machinery for packing have been introduced, the effect of which has been the same as in the manufacture of "cigars".

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

An establishment in California.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
<i>Cigars.</i>														
Sorter	Day										\$1 33	\$1 33	\$1 33	\$1 33
Stripper	do										1 00	1 00	1 00	1 00
Maker	Per 100 ...	\$0 55	\$0 00	\$0 00	\$0 00	\$0 00	\$0 00	\$0 05	\$0 05	\$0 70	80	80	80	80
Assorter	Per 1,000 ..	80	90	90	90	90	90	1 00	1 00	1 00	1 25	1 25	1 25	1 25
Packer	do	80	90	90	90	90	90	1 00	1 00	1 00	1 25	1 25	1 25	1 25

Classes of employés.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
<i>Cigars.</i>														
Sorter	Day	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33	\$1 33
Stripper	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Maker	Per 100 ...	80	80	80	80	80	80	80	80	80	80	80	80	80
Assorter	Per 1,000..	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Packer	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARKS.—These works were established in 1855, making only cigars. It will be noted that there has been no change in the rates of wages per hundred or thousand from 1855 until 1872. At this latter date the mold was introduced and rates were decreased. As a workman can, however, make a larger number of cigars with molds than in the old way, the earnings have remained about the same.

Employes are paid every Monday evening.

All classes of employes work from 8 o'clock in the morning till 5 in the evening. There has been no change in these hours since 1855.

These works have been in constant operation since 1855, except recently, during the month of February, which is the first month of the Chinese new year. As all of the employes are Chinamen, no work is done during this month.

The following are given as the prices of cigars per thousand in 1880, including the price of the United States internal-revenue stamp-tax of \$6 per thousand:

Cigars.	Price.
Common	\$14 00
Clear seed	20 00
Long-filler	25 00
Havana	30 00
Seed Havana	47 50
Clear Havana	55 00

Herman Gasch, Washington, District of Columbia.

(Continued on next page.)

Classes of employés.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
<i>Cigars.</i>																
Stripper, man.....	Day															\$2 08½
Stripper, boy	do					\$0 41½	\$0 33½				\$0 25	\$0 25				
Maker	do	\$1 42½	\$1 41½	\$1 33½	\$1 21½	1 35	1 43½	\$1 81	\$2 54	\$2 21	2 21½	2 21	\$1 00	\$1 00½	\$1 77½	2 41½
Female cigar-maker	do															
Apprentice	do	83½						75-83½	83½	75			75	50		
Second cigar-maker and clerk.	do		1 50	1 41½	1 25	1 16½	1 00				1 25	1 08½	1 00	2 33½	2 33½	

Classes of employés.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
<i>Cigars.</i>																
Stripper, man.....	Day	\$2 08½					\$1 00	\$1 00	\$0 01½	\$0 83½						
Stripper, boy	do		\$0 41½	\$0 33½	\$0 33½						\$0 25	\$0 25	\$0 21	\$0 10½	\$0 10½	
Maker	do	2 50	1 03½	1 55	1 18½	\$1 04	83½	1 11	1 16½	1 06	87½	83½	75	75	75	
Female cigar-maker	do												50	50		
Apprentice	do					91½	00½									
Second cigar-maker and clerk.	do		1 50	1 33½	1 16½						1 00	1 00	83½	83½		

STATISTICS OF WAGES—CIGARS AND TOBACCO.

Herman Gasch, Washington, District of Columbia—Continued.

REMARKS.—This establishment makes cigars only.

There have been frequent opportunities for extra earnings in the busy season, which would increase the wages given in the table.

All reliable employes and apprentices receive free board, washing, gas, and fuel, which would increase regular earnings.

As cigar-makers do piece-work, they are not restricted to fixed hours. Some work from 8 to 10 hours per day; others frequently not half that time.

These works have run with considerable regularity, except in 1864, when they were stopped 5 months, and 1865 7 months, the idleness resulting from varying internal-revenue taxation, chiefly the ad valorem rate.

The table of prices of cigars, etc., in the District of Columbia, given in the statement preliminary to the wages tables, is from this return.

There is a statement that there has been a gradual increase in the efficiency of labor, growing out of the demand for finer work.

John Rauch, Indianapolis, Indiana.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
<i>Cigars.</i>										
Stripper	Day	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50
Maker	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Packer	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00

REMARKS.—The regular hours of labor at this establishment are 10. Though cigar-makers work by the piece, the proprietor insists that they shall work regular hours as far as possible, he finding that the men are steadier and less liable to dissipation when working a regular number of hours a day than when working irregularly.

This establishment has been run on an average 11½ months a year.

The following statement as to the average prices, labor cost, and percentage of wages to cost, of cigars per thousand from 1870 to 1880 is given:

Prices.	Labor cost.	Percentage of wages to cost.
		<i>Per cent.</i>
\$15 00	\$6 00	40
20 00	7 00	35
25 00	8 00	32
30 00	9 00	30
35 00	11 00	32
60 00	15 00	25
75 00	18 00	24

Gail & Ax, Baltimore, Maryland.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
<i>Fine-cut tobacco.</i>												
Sorter, female	Day	\$0 50			\$0 50							\$0 55
Stripper, female	do	39½						\$0 33½	\$0 18			20
Packer, female	do	58½			58½							
Laborer.....	do	1 20			1 20					\$1 40		1 50

Classes of employes.	Unit of payment.	DATES.										
		1860.	1863.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.
<i>Fine-cut tobacco.</i>												
Sorter, female	Day ...	\$0 00				\$0 05	\$0 55-00	\$0 50				\$0 40
Stripper, female	do ...	24½				20						22
Packer, female	do ...						65½-80					48
Laborer.....	do ...	1 00				1 70	1 20-1 00	1 15	\$0 95-1 10	\$0 85		05

REMARKS.—In this return it is stated that a quarter of a pound of smoking tobacco is given to each grown male and an eighth of a pound to each boy per week; none to the female employes. The hours of labor have been 10 a day since 1850, and the works have been run on an average nearly 12 months a year, there having been some short stoppages, growing out of changes in the internal-revenue tax.

The following statement is given as to the cost of labor and percentage of wages to cost on smoking tobacco, fine-cut tobacco, and snuff:

Grade.	Cost of labor per pound.	Percentage of wages to cost.
		<i>Per cent.</i>
Smoking tobacco	\$0 08	19.0
Fine-cut tobacco	3½	13.2
Snuff	4	13.3

The above are the percentages to cost, minus the revenue tax.

STATISTICS OF WAGES—CIGARS AND TOBACCO.

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An establishment in Maryland.

Classes of employes.	Unit of payment.	DATES.															
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
<i>Cigarettes.</i>																	
Sorter.....	Day	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stripper.....	do	50	50	50	50	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maker.....	Per 1,000	60	60	60	60	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packer.....	do	15	15	15	15	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cutter.....	Day	1 50	1 50	1 50	1 50	1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Smoking tobacco.</i>																	
Sorter.....	do	50	50	50	50	50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50
Stripper.....	do	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Casser.....	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Cutter.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Laborer.....	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	.....	1 25	1 25	1 25	1 25	1 25

REMARKS.—This establishment makes both cigars and smoking tobacco. It will be noticed that there have been no changes in the rates of wages during the years covered by the tabulation.

Ten hours have constituted a day's work for all classes of employes.

From 1866, when the works were established, to 1865, while the brands were being introduced to the market, it was operated but one-third time; from 1866 to 1870, three-fourths time, and from 1870 to 1880, the brands having established a reputation, the works have run full time.

Prices, labor cost, and percentage of wages to cost of smoking tobacco and cigarettes are as follows:

Year.	SMOKING TOBACCO.			CIGARETTES.		
	Price per pound.	Cost of labor per pound.	Percentage of wages to cost.	Price per thousand.	Cost of labor per thousand.	Percentage of wages to cost.
1865.....	\$0 35	\$0 08	<i>Per cent.</i>			<i>Per cent.</i>
1870.....	40	5				
1875.....	45	8				
1880.....	48	2½	10	\$4 75	\$0 80	20

An establishment in Maryland.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
<i>Cigarettes.</i>													
Foreman	Day	\$2 50	\$3 00										
Stripper.....	do	37½	37½										
Maker	do	1 00	1 00										
Assortor	do	60	60										
Packer.....	do	37½	37½										
<i>Smoking tobacco.</i>													
Foreman of cutting-room.....	do	2 50	2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 00
Engineer.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75
Cutter.....	do	1 50	1 50	1 50	1 50	1 07	1 07	1 07	1 07	1 07	1 50	1 50	1 50
Dryer	do	1 25	1 25	1 25	1 25	1 33	1 33	1 33	1 33	1 33	1 25	1 25	1 25
Sorter.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Foreman of packing-room.....	do	2 00	1 83	1 83	1 83	1 75	1 75	1 67	1 67	1 67	1 50	1 50	1 50
Boy in packing-room.....	do	50-70	50-70	50-70	50-70	50-70	50-70	50-70	50-70	50-70	50-70	50-70	50-60
Girl in packing-room.....	do	33-70	33-70	33-70	33-70	33-70	33-70	33-70	33-70	33-70	33-70	33-70	33-60
Other male hands	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—For some 4 months in the year there are opportunities for over-time at these works, which would increase regular wages from 3 to 6 per cent., and are not included in the above table.

All classes work 10 hours a day, and have done so since 1869. Over-time is not approved of, though it has never been regarded as

injurious to the health of the employes. The works have been operated 12 months in the year, though the number of employes has varied at different times. There is the same complaint in this schedule about the effect of the revenue tax upon production that is mentioned in connection with other tabulations.

STATISTICS OF WAGES—CIGARS AND TOBACCO.

Catlin Tobacco Company, Saint Louis, Missouri.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Fine-cut tobacco.												
Sorter	Day	\$6 65	\$6 65	\$6 65	\$6 65	\$6 65	\$6 65	\$6 65	\$6 65	\$6 65	\$7 00	\$7 00
Stripper	do	1 10	1 00	90	90	90	90	1 00	1 00	1 10	1 15	1 15
Caser	do	6 65	6 65	6 65	6 65	6 65	6 65	6 65	6 65	6 65	7 00	7 00
Cutter	do	2 85	2 76	2 66	2 66	2 66	2 66	2 66	2 75	2 80	3 00	3 00
Packer	do	2 25	2 15	2 10	2 10	2 10	2 10	2 15	2 15	2 25	2 35	2 35
Laborer	do	1 60	1 50	1 40	1 40	1 40	1 40	1 50	1 50	1 60	1 66	1 66

Classes of employ6s.	Unit of payment.	DATES.										
		1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1850.
<i>Fine-cut tobacco.</i>												
Sorter	Day	\$7 00	\$6 05	\$6 65	\$5 75	\$5 00	\$5 00	\$4 30	\$4 00	\$2 66	\$2 06	.....
Stripper	do	1 15	1 15	1 15	1 30	1 30	1 30	1 30	1 00	70	70	.....
Caser	do	7 00	6 05	6 65	5 75	5 00	5 00	4 30	4 00	2 06	2 06	.....
Cutter	do	3 00	3 00	3 00	3 30	3 30	3 30	3 00	2 35	1 85	1 85	.....
Packer	do	2 35	2 35	2 35	2 50	2 50	2 50	2 35	1 85	1 30	1 30	.....
Laborer	do	1 00	1 00	1 00	1 85	1 85	1 85	1 68	1 30	1 00	1 00	.....

REMARK.—There were no statements of importance in this return, other than those contained in the preliminary remarks.

Liggett & Myers Tobacco Company, Saint Louis, Missouri.

Classes of employes.	Unit of pay- ment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
<i>Plug tobacco.</i>																
Sorter	Day ..	\$1 10 $\frac{3}{4}$ - 1 33 $\frac{1}{4}$	\$1 00- 1 10 $\frac{3}{4}$	\$0 83 $\frac{1}{4}$ - 1 33 $\frac{1}{4}$	\$0 66 $\frac{2}{3}$ - 1 33 $\frac{1}{4}$	\$1 00- 1 33 $\frac{1}{4}$	\$0 83 $\frac{1}{4}$ - 1 33 $\frac{1}{4}$	\$1 10 $\frac{3}{4}$ - 1 33 $\frac{1}{4}$	\$1 10 $\frac{3}{4}$ - 1 33 $\frac{1}{4}$	.....	.....	.....	\$1 25	.....	.....	.....
Stripper	do ..	50	50	50	62 $\frac{1}{4}$	25	25	25	25	\$0 25	.....	.....	85	.....	.....	.....
Caser	do ..	83 $\frac{1}{4}$ - 1 66 $\frac{2}{3}$	1 10 $\frac{3}{4}$	.....	.....	.....	1 33 $\frac{1}{4}$-	.....	.....	.....	.....	.....	2 50	.....	.....	.....
Plug-maker	do ..	1 16 $\frac{2}{3}$	.....	1 10 $\frac{3}{4}$	1 10 $\frac{3}{4}$	.....	1 00- 1 33 $\frac{1}{4}$	.....	.....	.....	.....	.....	3 00	.....	.....	.....
Wrapper, girl or boy	do ..	75- 1 50	.....	66 $\frac{2}{3}$ - 83 $\frac{1}{4}$	66 $\frac{2}{3}$ - 1 00	83 $\frac{1}{4}$ - 1 00	66 $\frac{2}{3}$ - 1 00	.....	.....	.....	.....	.....	1 25	.....	.....	.....
Pressman	do ..	1 10 $\frac{3}{4}$	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 00	.....	.....	.....
Packer	do ..	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$2 25	2 25	.....	.....	.....
Laborer	do ..	1 10 $\frac{3}{4}$	.....	.....	.....	.....	1 00- 1 16 $\frac{2}{3}$	.....	.....	.....	.....	.....	1 50	.....	.....	.....

Classes of employées.	Unit of pay-ment.	DATES.															
		1805.	1804.	1803.	1802.	1801.	1800.	1850.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
<i>Plug-tobacco.</i>																	
Sorter.....	Day ..	\$1 25	.....	.....	\$1 25	.....	\$1 00	\$1 00	.....	.....	.....	.....	.....	.....	.....	.....	\$1 00
Stripper.....	do ..	1 00	.....	.....	1 00	.....	50	50	.....	.....	.....	.....	.....	.....	.....	.....	50
Caser	do ..	2 50	.....	.....	2 50	.....	1 50	1 50	.....	.....	.....	.....	.....	.....	.....	.....	1 50
Plug-maker	do ..	4 00	.....	.....	4 00	.....	2 50	2 50	.....	.....	.....	.....	.....	.....	.....	.....	2 25
Wrapper, girl or boy ..	do ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pressman	do ..	2 50	.....	.....	2 50	.....	1 10	1 10	.....	.....	.....	.....	.....	.....	.....	.....	1 10
Packer	do ..	3 60	.....	.....	3 00	.....	1 25	1 25	.....	.....	.....	.....	.....	.....	.....	.....	1 25
Laborer	do ..	1 50	.....	.....	1 50	.....	1 00	1 00	.....	.....	.....	.....	.....	.....	.....	.....	1 00

REMARK.—There were no statements of importance in this return, other than those contained in the preliminary remarks.

STATISTICS OF WAGES—CIGARS AND TOBACCO.

45

An establishment in New Jersey.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
<i>Fine-cut tobacco.</i>																
Sorter	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Stripper	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Caser	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Cutter	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Packer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 37	1 37	1 37	1 37
Laborer	do	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 30	1 36	1 25	1 25	1 12	12

Classes of employes.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
<i>Fine-cut tobacco.</i>																	
Sorter	Day	\$2 50	\$2 50	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50
Stripper	do	1 00	1 00	1 00	1 00	1 00	1 00	75	75	75	75	75	75	75	75	75	75
Caser	do	1 00	1 00	1 00	1 00	1 00	1 00	70	70	70	70	70	70	70	70	70	70
Cutter	do	2 00	2 00	2 00	2 00	2 00	2 00	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer	do	1 37	1 37	1 37	1 37	1 37	1 37	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Laborer	do	90	90	70	70	70	70	70	70	70	70	70	70	70	70	70	70

REMARKS.—The interval of payments at these works from 1830 to 1864 was two weeks. At the latter date weekly payments were demanded and conceded. In 1875, however, payment every two weeks was restored. This was found to be advantageous to the em-

ployés, many of them not losing so much time in proportion as when they had weekly payments. The following very complete statement as to prices of tobacco, cigars, etc., is given in this schedule:

Year.	TOBACCO.			CIGARS.		
	Fine-cut, per pound.	Plug, per pound.	Smoking, per pound.	First grade, per thousand.	Second grade, per thousand.	Third grade, per thousand.
1840.....	\$0 25	\$0 18 to 21	\$0 10	\$5 00	\$10 00	\$16 00
1845.....	25	18 to 21	10	5 00	10 00	16 00
1850.....	25	18 to 21	10	5 00	10 00	16 00
1855.....	25	18 to 21	12	5 00	10 00	16 00
1860.....	25	18 to 21	12	5 00	10 00	16 00
1865.....	\$0 55 to 70	55 to 60	50	10 00	16 00	50 00
1870.....	50 to 65	35 to 40	30	10 00	16 00	50 00
1875.....	50 to 61	40 to 50	30	10 00	16 00	50 00
1880.....	35 to 50	32 to 40	26	10 00	16 00	50 00

D. Buchner & Co., New York, New York.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Fine-cut tobacco.							Fine-cut tobacco.						
Sorter.....	Day ...	\$2 00	\$2 00	\$2 00	\$3 00	\$2 00	Packer.....	Day ...	\$1 16	\$1 00	\$1 00	\$1 00	\$1 00
Stripper.....	do ...	60	60	60	60	60	Laborer.....	do ...	1 50	1 33	1 33	1 33	1 33
Caser.....	do ...	2 00	2 00	2 00	2 00	2 00	Dresser.....	do ...	2 00	2 00	2 00	2 00	2 00
Cutter.....	do ...	2 10	2 10	2 00	2 00	2 00	Spreader.....	do ...	2 00	2 00	2 00	2 00	2 00

REMARK.—The only statement of interest in this schedule, other than what has been already given in the general remarks, is a somewhat imperfect one regarding prices of product, etc., which is as follows:

Year.	PRICES.			LABOR COST.		
	Fine-cut tobacco in bulk, per pound.	Gold Coin chewing, 1 ounce fine, per gross.	Cigarette tobacco, per thousand.	Fine-cut.	Gold Coin.	Cigarettes.
1870.....	\$0 30	\$5 50	.....	\$0 05½	.....	.....
1880.....	28	5 60	\$0 75	4	.....	\$1 10

STATISTICS OF WAGES—CIGARS AND TOBACCO.

An establishment in the state of New York.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Cigars.												
Stripper	Day	\$0 01½					\$0 01½					\$1 00
Maker	do	1 83½					2 00					3 00
Assorter	do	3 00					3 16½					3 00½
Packer	do	3 00					3 16½					3 00½

REMARK.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here.

An establishment in North Carolina.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
<i>Plug tobacco.</i>												
Sorter	Day	\$0 80	\$0 75	\$0 75	\$0 80	\$0 80	\$0 75	\$0 75	\$0 00	\$1 00	\$1 00	\$1 00
Stripper	do	48	48	48	48	48	45	45	48	50	50	50
Caser	do	1 12½	1 12½	1 12½	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Plug-maker	do	2 00	2 00	2 25	2 25	2 25	2 25	2 50	2 50	2 75	2 75	2 75
Pressman	do	1 12½	1 12½	1 25	1 25	1 25	1 25	1 25	1 37½	1 50	1 50	1 50
Packer	do	1 00	1 00	1 00	1 12½	1 12½	1 12½	1 12½	1 12½	1 25	1 25	1 25
Laborer	do	87½	87½	87½	1 00	1 00	87½	87½	87½	1 00	1 00	1 00
Twister	do	2 25	2 25	2 50	2 50	2 50	2 50	2 75	2 75	3 00	3 00	3 00

REMARKS.—At this establishment all the employes are colored.

There are some opportunities for extra earnings. Over-time is paid for at 5 per cent. additional to regular rates. In case of failure on the part of the firm to provide a full day's work, employes are always paid for full time.

As is the custom at most establishments making cigars and tobacco, the employes are supplied with chewing tobacco for their own use without charge.

The average number of months worked for the last ten years has been 8½. Though this establishment is in North Carolina, the chief cause of the irregularity is the cold weather. Winter-made goods are not profitable. Labor also is hard to control in winter months. The closing month of the busy season is much dreaded by the employer. It is difficult to secure full time from the workmen, and an average yield is impossible. This will doubtless continue while living in this climate remains so cheap. The negro is fond of holidays and the leisure months are eagerly looked forward to. He is

said to be inclined to regard a full year's work as an encroachment upon his liberty.

The following are prices for the grades of tobacco made in the month of March, 1880, the internal revenue of 16 cents per pound being included:

Grade.	Per pound.
Common tobacco	\$0 33
Medium tobacco	36
Low medium tobacco	40
Fine tobacco	50
Select fancy tobacco	\$0 75 to 1 00

The average labor cost per pound on all grades is 5½ cents. It is estimated that 1½ cent per pound will cover all additional expenses, wear and tear, taxes other than internal revenue, etc., leaving the balance for cost of material and profit.

An establishment in North Carolina.

Classes of employes.	Unit of payment.	DATES.																
		1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
<i>Cigarettes.</i>																		
Maker	Per 1,000	\$0 60-80	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Assorter	Day	50	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Packer	Per 1,000	10	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Cutter	do	5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
<i>Smoking-tobacco.</i>																		
Sorter	Day	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40	\$0 40
Stripper	do	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Caser	do	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Cutter	do	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Packer	do	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Laborer	do	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50	25-50

REMARKS.—This establishment began the manufacture of cigars in 1881; prior to that it had made smoking tobacco. In the years covered by the schedule there has been no change in the rates of wages, which, it will be noted, are extremely low. The employes are chiefly colored, and to a large extent are boys and girls.

At these works 10 per cent of the wages is paid in firewood and extra provisions, and the balance in cash.

The selling price of smoking tobacco is stated to be from 25 cents to \$1 per pound, and cigars from \$5 to \$6 per M. The labor cost of smoking-tobacco is given at 1 cent per pound; of cigars, \$1 per M.

STATISTICS OF WAGES—CIGARS AND TOBACCO.

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F. E. Kelsey, Cleveland, Ohio.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
<i>Cigars.</i>												
Sorter	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 40 $\frac{1}{2}$	\$2 40 $\frac{1}{2}$	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Stripper, girl	do	71	71	57 $\frac{1}{2}$	74	74	74	88 $\frac{1}{2}$ - 1 00 $\frac{1}{2}$	88 $\frac{1}{2}$ - 1 00 $\frac{1}{2}$	88 $\frac{1}{2}$ - 1 00 $\frac{1}{2}$	88 $\frac{1}{2}$ - 1 00 $\frac{1}{2}$	88 $\frac{1}{2}$ - 1 00 $\frac{1}{2}$
Maker	do	1 74 $\frac{1}{2}$	1 41 $\frac{1}{2}$	1 41 $\frac{1}{2}$	1 41	1 41	1 41	2 18- 2 01 $\frac{1}{2}$	2 18- 2 01 $\frac{1}{2}$	2 18- 2 01 $\frac{1}{2}$	2 18- 2 01 $\frac{1}{2}$	2 18- 2 01 $\frac{1}{2}$
Packer	do	2 50	2 50	2 50	2 50	3 12 $\frac{1}{2}$	3 12 $\frac{1}{2}$	3 75	3 75	3 75	3 75	3 75

REMARKS.—This return gives the following very interesting statement regarding the labor cost of cigars selling for different prices:

Classes of employes.	CIGARS SELLING AT—				
	\$20 per 1,000.	\$25 per 1,000.	\$30 per 1,000.	\$35 per 1,000.	\$40 per 1,000.
	Per 1,000.	Per 1,000.	Per 1,000.	Per 1,000.	Per 1,000.
Cigar-maker	\$5 00	\$6 00	\$6 00	\$7 00	\$11 00
Stripper	50	00	00	75	1 00
Assorter	50	60	00	75	1 00
Packer	1 00	1 25	1 25	1 25	1 50
Total	7 00	8 45	8 45	9 75	14 50

It is stated that this percentage of cost of labor to selling price will apply to one year as well as to another, if the tax is the same.

J. & B. Rohrheimer, Cleveland, Ohio.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
<i>Cigars.</i>												
Stripper	Day	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70	\$0 70
Maker	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Packer	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50

REMARK.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
<i>Cigars.</i>															
Maker	Per 1,000	\$7 50	\$6 50	\$6 00	\$6 00	.....	\$7 00	.....	.....	.....	.....	\$8 00	.....	.....	.....
Packer	do	1 00	1 00	1 00	1 00	.....	1 25	.....	.....	.....	.....	1 50	.....	.....	.....

Classes of employes.	Unit of payment.	DATES.													
		1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.
<i>Cigars.</i>															
Maker	Per 1,000	.....	\$11 00	.....	.....	.....	.....	\$6 00	.....	.....	.....	.....	\$4 50	.....	\$3 00
Packer	do	.....	1 75	.....	.....	.....	.....	50	.....	.....	.....	.....	40	.....	30

REMARKS.—From 1853, the date of the establishment of these works, up to 1865, cigar-makers worked on an average 10 hours a day; since then, 8 hours. It is stated that it has been observed that the decrease in the hours of labor tends to produce dissipation.

These works have run full time from their organization, with the exception of idleness caused by two strikes and a lockout; one strike of 6 weeks in 1859, another of 13 weeks in 1868, and a lock-out of 5 weeks in 1880.

It is stated that there has been a decrease in the efficiency of labor in cigar-making, growing out of the introduction of machinery. Labor-saving appliances tend to substitute mechanism for skill, and decrease efficiency.

Apprentices are not so well paid as formerly.

Up to 1871 cigars were made exclusively by hand; since that time, chiefly with molds, though some very fine hand-work is still produced.

An establishment in Ohio.

[illegible][illegible]

REMARKS.—These works were operated continually from 1863 until 1878, since which time, owing to a great decline in the consumption of fine-cut tobacco, which is its specialty, the establishment has run only three-fourths time.

Deducting the government tax, it is stated by the firm that the percentage of labor to the cost of production would be about 25 per cent.

Williamson & Routh, Petersburg, Virginia.

[Continued on next page.]

[illegible]

STATISTICS OF WAGES—CIGARS AND TOBACCO.

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Williamson & Routh, Petersburg, Virginia—Continued.

Classes of employes.	Unit of payment.	DATES.												
		1867.	1868.	1869.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Plug tobacco.														
Sorter	Day	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	.....
Stripper	do	60	60	60	60	60	60	60	60	60	60	60	60	.....
Caser	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	.....
Plug-maker	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Wrapper	do	50	50	50	50	50	50	50	50	50	50	50	50	.....
Pressman	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	.....
Packer	do	50	50	50	50	50	50	50	50	50	50	50	50	.....
Laborer	do	75	75	75	75	75	75	75	75	75	75	75	75	.....

REMARKS.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here, except that covering the relation of wages and labor to selling price and cost, which is given in the preliminary statement.

O. P. Gregory & Co., Richmond, Virginia.

Classes of employés.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	
<i>Plug tobacco.</i>													
Sorter	Day	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00
Stripper	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Caser	do	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½
Plug-maker	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Wrapper	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Pressman	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Packer	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Laborer	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Roller	do	83	83	83	83	83	83	83	83	83	83	83	83
Stemmer	do	50	50	50	50	50	50	50	50	50	50	50	50

Robert W. Oliver, Richmond, Virginia.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
<i>Cigars.</i>											
Twister	Per lb ..	\$0 01½	\$0 01½	\$0 01½	\$0 01½	\$0 01½	\$0 01½	\$0 01½	\$0 01½	\$0 01½	\$0 01½
Job-hand	Week...	5 00	5 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00	6 00
Maker	Per 1,000	7 00	7 00	7 00	7 00	7 00	7 00	7 00	7 00	7 00	7 00
Girl	Week...	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Boy	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Cigarette-maker	Per 1,000	50	50	50	50	50	50	50	50	50	50

REMARKS.—The following statement regarding the prices of tobacco, cigars, etc., is given in this schedule:

Year.	PRICES.				COST OF LABOR.			
	Plug tobacco.	Smoking tobacco.	Cigarettes.	Cigars.	Plug tobacco.	Smoking tobacco.	Cigarettes.	Cigars.
	Per pound.	Per pound.	Per 1,000.	Per 1,000.	Per pound.	Per pound.	Per 1,000.	Per 1,000.
1870	\$0 50	\$0 64	\$5 00	\$20 00	\$0 15	\$0 16	\$1 10	\$11 10
1875	47	54	5 00	20 00	11	11	1 20	11 00
1880	38	45	5 00	20 00	8	10	1 20	11 00

The difference between prices of plug and smoking tobacco in different years is largely due to the difference in tax.

In the above percentage the United States tax is ignored, it being calculated upon gross cost excluding the tax.

Augustus Pollack, Wheeling, West Virginia.

Classes of employés.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
<i>Cigars.</i>											
Stripper, boy or girl.....	Day	\$0 00	\$0 00	\$0 00	\$0 60	\$0 60	\$0 60	\$0 50	\$0 50	\$0 50	\$0 50
Maker	do	2 00	1 60	1 60	1 60	1 60	1 60	1 40	1 40	1 40	1 40
Packer, boy or girl	do	00	60	60	60	60	60	-----	-----	-----	-----
Caser	do	2 00	1 75	1 75	1 75	1 75	1 75	1 50	1 50	1 50	1 50
<i>Fine-cut tobacco.</i>											
Stripper, boy or girl.....	do	00	00	00	50	60	60	50	50	50	50
Caser	do	2 00	1 75	1 75	1 75	1 75	1 75	1 50	1 50	1 50	1 50
Cutter	do	2 00	-----	-----	-----	-----	-----	-----	-----	-----	-----
Packer, boy or girl	do	80	75	75	75	75	75	70	70	70	70
Laborer	do	1 25	1 20	1 20	1 20	1 20	1 20	1 00	1 00	1 00	1 00

REMARK.—The explanatory and supplemental statements accompanying this report are not of sufficient importance to insert here.

An establishment in Wisconsin.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Cigars.												
Stripper	Day	\$0 46	\$0 41½	\$0 41½	\$0 41½	\$0 41½	\$0 41½	\$0 41½	\$0 41½	\$0 41½	\$0 41½	\$0 41½
Maker	do	1 75	1 66½	1 83½	1 80½	1 66½	1 66½	1 66½	1 66½	2 00	2 00	2 00
Packer	do	3 08½	3 00	3 00	3 00	2 66½	2 66½	2 88½	2 88½	3 00	3 00	3 00

Classes of employes.	Unit of payment.	DATES.										
		1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.
<i>Cigars.</i>												
Stripper.....	Day	\$0 38½	\$0 38½	\$0 38½	\$0 38½	\$0 38½	\$0 38½	\$0 38½	\$0 30	\$0 25	\$0 25	.....
Maker.....	do	2 33½	2 33½	2 16½	2 16½	2 33½	2 33½	2 00	1 66½	1 33½	1 33½	.....
Packer.....	do	2 89½	2 83½	2 66½	2 66½	3 00	2 50	2 20	2 00	1 75	1 75	.....

REMARKS.—Regarding hours of labor and regularity of employment, the opinion is expressed in this schedule that employes of all classes never work more steadily, are never more careful and attentive, and never produce better work, than when employed regularly. Over-time, when orders demand it, does not materially increase the week's earnings, because work is sluggishly done the next morning. Short work hours, in dull season, tend to make workmen careless in work and habits.

The only irregularity of employment since 1860 was a 3-months' stop in 1872, the result of a strike.

The labor cost in the table below includes wages paid to cigar-maker, stripper, and packer. It is also stated that in some of the cheap grades of cigars there is an absolute loss, owing to the strong competition of cigar-makers in the eastern factories.

The following statement as to relation of wages and labor to selling price and cost of cigars per 1,000 is given in the schedule:

Year.	PRICES.		LABOR COST.	
	Lowest grade.	Highest grade.	Lowest grade.	Highest grade.
1865.....	\$22 50	\$70 00	\$7 75	\$19 00
1870.....	22 50	65 00	7 75	11 75
1875.....	21 00	60 00	6 75	14 50
1880.....	20 00	57 00	7 75	14 50

CLOTHING.

A few returns relating to the manufacture of clothing were received, but a disinclination to give the facts was manifested. In many cases, and in certain occupations in connection with this industry, very low rates of wages are paid. It is difficult, however, to get at the earnings, as in many cases the work on clothing is in addition to other work.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

An establishment in Kentucky.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Salesman	Day	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 52	\$3 84
Tailor	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 75	2 75	2 75	2 75	2 75
Tailoress	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 83	1 83	1 83	1 83	1 83
Cutter	do	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Salesman	Day	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$2 56	\$2 56	\$2 56	\$2 56	\$2 56	\$2 56	\$2 56	\$2 56	\$2 56	\$2 56
Tailor	do	3 00	3 00	3 00	2 25	2 25	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Tailoress	do	2 00	2 00	2 00	1 50	1 50	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10
Cutter	do	4 80	4 80	4 80	4 80	3 84	3 84	3 84	2 88	2 88	2 88	2 88	2 88	2 88	2 88	2 88

REMARKS.—This manufactory, producing men's clothing, was established in 1848, and rates of wages are given from 1851.

During about 5 months each year, from the middle of March to June 1, and from the middle of September to December 1, considerable over-time is made, the extra earnings for which have been considered in making up the table.

There are no privileges or allowances given which would increase regular wages.

Tailors furnish their own stoves, fires, light, and tools, the aggregate cost of which would diminish wages about 8 per cent. of the rates given above.

Cash payments each week are the rule, though some hands have drawn their pay as they required it.

The hours of labor for tailors have been irregular, but would average about 11 a day. For clerks the average is and has been about 13 per day.

Full time is made 12 months of each year.

There have been no lockouts, and no strikes that have lasted more than half an hour.

Wages have averaged about 27 per cent. of the total cost of coats and other garments during the time covered by the report.

Since 1860 there has been considerable improvement in the quality of the work done by tailors. This is ascribed to competition in the business, which has necessitated better work.

The sewing-machine was introduced into the business in 1855 or 1856, and has been gradually undergoing improvement, the amount of work to which the machine could be applied increasing. The tendency of the machines has been to increase wages, and notwithstanding the constantly growing use of machines the number of employes is greater than formerly, owing to the enlargement of the business.

The trade is regarded by the proprietor as a healthful one.

Garthwaite & Darcy, Newark, New Jersey.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$3 75	\$4 00	\$4 00	\$5 25	\$5 83	\$5 83	\$5 83	\$5 83	\$5 83	\$5 83	\$5 83	\$5 00	.....	.....	.....
Tailor	do	1 50	1 50	1 50	1 02	1 02	1 02	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 25
Tailoress	do	50	50	50	02	02	02	75	75	75	75	75	75	75	75	37
Cutter	do	2 83	2 50	2 50	3 33	3 33	3 33	3 33	3 33	3 33	3 33	3 33	3 33	3 33	3 33	2 50
Trimmer	do	2 00	2 00	2 00	2 00	1 02	1 50	1 50	1 25	1 00	1 00	1 00	.....	.....	.....	.....
Man	do	1 50	1 50	1 50	1 02	1 02	1 02	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 25
Woman	do	50	50	50	02	02	02	75	75	75	75	75	75	75	75	37

STATISTICS OF WAGES—CLOTHING.

Garthwaite & Darcy, Newark, New Jersey—Continued.

REMARKS.—The firm giving this statement are manufacturers and wholesale dealers in men's and boys' clothing. The shop was established in 1830.

It is stated that the rates of wages in the table are for medium qualities of work, and that it is difficult to give accurate figures, as the work is cut and trimmed and distributed in small and large quantities to be made.

As duplicate lots of goods are seldom made, and the qualities are exceedingly numerous, and vary greatly, it was not possible to give any statement of average selling prices.

The employes have been paid all in cash since 1839, as the use of store-orders was considered unjust to employes. Since 1860 wages have been paid weekly, and the hours of labor have been 10 a day for all classes.

The statement regarding regularity of employment, which also dates from 1860 only, is to the effect that the works are in operation 11 months each year.

No trouble from strikes has been experienced since 1860, and but little prior to that time.

Labor, it is estimated, constitutes 20 to 25 per cent. of total cost.

H. H. Cooper & Co., Utica, New York.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman	Month..	\$150 00	\$125 00	\$125 00	\$112 50	\$112 50	\$112 50	\$100 00	\$100 00	\$100 00	\$100 00
Salesman	Day	5 00	5 00	5 00	4 00	4 00	4 00	3 00	3 00	3 00	3 00
Cutter	do	2 50			2 50		2 50				
Presser	do	1 75	1 75	1 75	1 75						
Trimmer	do	1 75	1 75	1 75	1 75	1 75	1 75	1 50	1 50	1 50	1 50
Apprentice	do	75	75	75	75	75	75	50	50	50	50

REMARKS.—This establishment began business in 1871.

There are no considerations which would alter the value of the wages given in the table.

Payments are weekly and all in cash.

The hours of labor are 10 a day.

The works are operated continuously.

The following are given as the selling prices of several articles of product in 1880: Overcoats, \$8 25; coats, \$6 75; pantaloons, \$3 87½, and vests, \$1 75.

Labor, it is estimated, is about 17½ per cent. of total cost.

A. C. Yates & Co., Syracuse, New York.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.													
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	
Foreman.....	Month..	\$120 00	\$120 00	\$120 00	\$112 00	\$112 00	\$112 00	\$100 00	\$100 00	\$100 00	\$100 00	\$112 00	\$112 00	\$120 00	
Tailor	Day	1 50	1 50	1 06½	1 50	1 50	1 50	1 50	1 50	1 33½	1 33½	1 50	1 50	1 06½	
Tailoress	do	83½	83½	83½	83½	83½	83½	83½	83½	75	75	83½	83½	83½	
Cutter	do	2 06- 3 33	2 06- 3 33	2 06- 3 33	2 06- 3 16	2 50- 3 00	2 33- 3 00	2 33- 3 00	2 33- 3 00	2 33- 3 00	2 33- 3 00	2 33- 3 00	2 33- 3 00	2 33- 3 00	
Machine-woman	do	1 00	1 00	1 00	1 00	1 00	83½	83½	83½	83½	83½	75	75	75	
Presser.....	do	1 33	1 33	1 33	1 16	1 16	1 16	1 16	1 00	1 00	1 16	1 16	1 33	1 33	
Trimmer	do	1 66	1 66	1 06	1 60	1 50	1 33	1 33	1 33	1 16	1 16	1 16	1 00	1 00	
Apprentice	do	50	50	41	41	33½	33½	33½	33½	33½	33½	33½	41	41	

Classes of employes.	Unit of payment.	DATES.													
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1850.	1858.	1857.	1856.	1855.	
Foreman	Month..	\$120 00	\$120 00	\$120 00	\$120 00	\$100 00	\$100 00	\$80 00	\$80 00	\$72 00	\$72 00	\$60 00	\$60 00	\$60 00	
Tailor	Day	1 66½	1 33½	1 33½	1 33½	1 33½	1 06½	1 50	1 50	1 50	1 50	1 50	1 50	1 50	
Tailoress	do	83½	83½	83½	83½	83½	83½	66½	66½	66½	66½	66½	66½	66½	
Cutter	do	2 50- 3 33	2 50- 3 33	2 50- 3 33½	2 50- 3 33½	2 33- 3 00	2 33- 3 00	2 00- 2 50	1 00- 2 00	1 00- 2 00	1 50- 1 00	1 50- 1 00	1 33- 1 50	1 33- 1 50	
Machine-woman	do	83½	83½	83½	83½	83½	83½	75	66½	66½	66½	66½	66½	66½	
Presser.....	do	1 33	1 33	1 50	1 50	1 50	1 33	1 16	1 00	1 00	1 10½	1 10½	1 10½	1 10½	
Trimmer	do	1 00	1 00	1 00	1 00	83½	83½	83½	66½	66½	66½	66½	50	50	
Apprentice	do	41	50	50	50	41	41	41	33½	33½	33½	33½	33½	33½	

REMARKS.—This establishment manufactures men's, boys', and children's clothing, and has been in operation since 1855.

After the work is cut in the factory it is made up by the piece under contract by tailors who run their own shops, furnish tools; and employ their own workmen.

An hour and a half over-time each day is usually made during four to six weeks in the spring and fall. This extra work, for which price and a half is paid, has not been considered in the above table.

No allowances are mentioned.

Cutters own their shears, but since 1875 most of the cutting has been done by machines, which are furnished by the firm.

Employes are paid weekly and in cash.

The hours of labor are 10 a day.

From 1855 to 1865 the time lost averaged about two weeks per year; from 1866 to 1870, six weeks, and from 1871 to 1880, a month, the cause of idleness being irregularity of supply of material from the mills.

No strikes or lockouts have occurred.

A. C. Yates & Co., Syracuse, New York—Continued.

Regarding selling prices, it is stated that the variety of product is so great that it is difficult to give a representative statement.

Four articles of product have been selected, however, regarding which selling prices and labor cost are given below:

Year.	PRICES OF PRODUCT.				COST OF LABOR TO A UNIT OF PRODUCT.				PERCENTAGE OF WAGES TO COST.
	Heavy cotton suits.	Good quality cotton and wool suits.	Coarse all-wool suits.	Medium all-wool suits.	Heavy cotton suits.	Good quality, cotton and wool suits.	Coarse all-wool suits.	Medium all-wool suits.	Average all grades.
									<i>Per cent.</i>
1855	\$3 50	\$8 00	\$10 00	\$12 00	\$0 75	\$1 35	\$1 75	\$2 25	16
1860	3 50	8 00	10 00	12 00	75	1 35	1 75	2 25	16
1865	6 00	14 00	18 00	22 00	90	2 00	2 75	3 50	18
1870	5 00	12 00	15 00	18 00	90	1 75	2 00	2 75	18
1875	4 25	11 00	13 50	16 00	80	1 75	2 00	2 50	20
1880	4 00	10 50	12 00	15 00	80	1 65	2 00	2 50	20

The figures for labor cost cover only the wages paid to tailors. Other expenses, such a rent of building, use of machinery, cutting

and handling cloth, etc., would increase the above prices about 15 per cent.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Tailor	Day	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½	\$1 25- 2 08½
Baster-girl	do	16½- 50	16½- 50	16½- 50	16½- 50	16½- 50	16½- 50	16½- 50	16½- 50	16½- 50	16½- 50
Machine-woman	do	41- 1 16	41- 1 16	41- 1 16	41- 1 16	41- 1 16	41- 1 16	41- 1 16	41- 1 16	41- 1 16	41- 1 16
Apprentice	do	41- 50	41- 50	41- 50	41- 50	41- 50	41- 50	41- 50	41- 50	41- 50	41- 50

REMARKS.—This manufactory was established in 1869, and makes pantaloons for the wholesale trade, producing from seventy-five to one hundred pairs per day.

There are no opportunities for extra earnings and no allowances or deductions.

The employes are paid weekly and in cash.

The hours of labor, which are 10 a day, have remained unchanged.

The works are carried on 12 months each year, and no labor difficulties have occurred.

No change has been noted in the efficiency of labor.

The only machinery used is the Singer sewing-machine, which has not reduced the number of employes.

Tailoring is generally regarded as an unhealthy trade. The shop at this establishment, however, is well ventilated and favorably located.

FLOUR- AND GRIST-MILLS.

The returns regarding the manufacture of flour are among the most interesting of the series. Of the 269 schedules sent out 85 were returned, of which but 47 were complete enough for publication. These, however, are well distributed among the states.

One or two of the returns give wages in the production of meal. It is deemed best, however, in view of the fact that the classes of employes are the same as in milling, not to make a separate classification for these.

Quite a number of the schedules that are tabulated give rates of wages for one year, accompanied with the statement that these rates have been those paid for many years, there having been no change. One of the most notable facts in connection with the tables of wages in this industry is this slight fluctuation in rates. In the second table from California, which gives rates of wages for 11 classes of labor back to 1861, there are but two changes in the rates until 1880. In the return of Sperry & Co., Stockton, California, which gives rates for 12 classes from 1871, there is not a single change. An examination of the tables from Dakota, Delaware, Missouri, and Nevada mills indicates a similar stability of rates. In the return of F. Huning, New Mexico, which gives rates for 3 classes of labor back to 1864, there is no change until 1869, when a reduction took place. From this time to 1880 there is no further change. The report of Thornton & Chester, Buffalo, New York, dating from 1868, shows no change of wages until 1879, when an advance took place in a number of classes. When fluctuations have occurred it will also be observed that as a rule they are not so great as in other industries. In calling attention to this stability of rates of wages shown, one of the large millers in Minnesota says:

During the financial panic, which is generally a time of low wages, our workmen were not reduced, as our business was then more prosperous than in the years preceding this panic; indeed, our business is always more prosperous with tight money markets, because wheat speculation, the great barrier to successful milling, is kept in check when money is high. We have always noticed that the tighter the money markets the more profit there is in milling.

Extra earnings or deductions.—As a rule, the opportunities for extra time in this industry are very few. In many cases the mills run night and day, working two sets of hands 12 hours each. In other cases, when the mill is doing a local trade, there are no regular hours, the mill running until the work is done, the time so employed, without reference to its length, being counted a day. In a few cases it is reported that the millers and engineers make some over-time, and in two establishments, one in Georgia and one in Illinois, the reports state that there are frequent opportunities for over-time, the Georgia concern reporting over-time for 6 months in the year and the Illinois over-time 4 hours a day during the busy season. It still holds good, however, that in this industry there are, as a rule, few opportunities for extra time.

There are but few allowances that would serve to increase wages, the chief one being opportunities to purchase flour and feed at wholesale rates. One schedule reports free houses furnished to the chief employes. F. A. Foreman, of Indian territory, states that board is given free in two cases. These are the only exceptions to the statement that there are no allowances.

As a rule, the workmen in this industry are not obliged to pay out any part of their earnings for tools, under-hands, etc. Three of the schedules, out of the 47 tabulated, state that the millwrights furnish their own tools, which would decrease their wages about 5 per cent.

Payments.—With but few exceptions, all payments to labor are in cash. In a number of instances, however, it is stated that the mills allow the operatives to purchase their flour and feed at wholesale rates, and this might possibly be regarded as payment in kind. In but five instances out of 47, with the exception of what flour and feed is bought, are the employes paid in merchandise. In but one case does the proportion so paid reach as much as 25 per cent. of these wages. Three of these five are in Missouri, Nevada, and New Mexico, respectively, the mills being so situated that it is probably a necessity that they should have stores.

The statements regarding intervals of payment present some interesting facts. In many cases, as will be seen from the tables below, some of the operatives at a given mill are paid monthly, others weekly; the rule being that the higher-paid workmen, as the miller, etc., receive their pay monthly, the lower-paid receiving theirs weekly. In a number of cases, also, the workmen have advances made to them on application, with a final settlement at the end of each month. As a rule, however, payments are weekly.

Hours of labor.—As has already been stated, in many cases, especially at works that do a local trade, there are no regular hours of work, they being longer or shorter, according to the amount of work to be done. When

mills are run by water-power the supply of water controls the hours of labor. Where milling is conducted as a regular business the hours of the different classes of employes are regular. Many of these mills run night and day, working two shifts of men.

Regularity of employment.—Many flour-mills are run by water; consequently, in seasons of either low or high water, the mills run very irregularly. In case of light crops the mills do not run full time. One proprietor states the cause at his mill to be discrimination on the part of the railroads. Another states the irregularity in the early history of the mill to be the difficulty of selling winter-ground flour, but states that this difficulty has been overcome by warming the wheat before grinding.

There have been but few strikes in this industry, and consequently but little irregularity in the operation of the works from this cause.

Relation of wages and labor to selling price and cost.—The statements under this head are many of them exceedingly valuable, being not only very complete for a series of years, but giving statements for mills in various parts of the country. Unless expressly stated to the contrary, labor cost must be understood to include only the labor at the mill. The slight fluctuation in this cost at many establishments in a series of years will not escape notice.

It should be noted, however, in regard to the prices of product, that there has been a great improvement in the quality of flour, and that the flour for which prices are given in 1880 is superior to that made in 1870, though the grading might be the same. A prominent Minnesota miller, in speaking of this, says:

The flour made ten years ago no more resembles the flour of to-day than cheese resembles chalk. Probably the most astonishing progress to be found in manufacturing appliances during these years is to be found in those for making spring-wheat flour. When we commenced milling thirteen years ago, Minnesota spring-wheat flour was at the bottom of the scale in merit and in prices. Now this flour stands at the head both as to price and actual nutritious value. The improvements in milling have been wonderful, and spring-wheat flour, instead of selling some 25 or 30 cents per barrel below winter-wheat flour, is now well above it in price. Quotations of Minnesota spring-wheat flours in former years could be got through New York parties, but they would be absolutely worthless as a comparison, because from being the poorest flour on the market it has changed to the best. At the same time winter-wheat flours have also improved; so you can see that the change in the spring-wheat flours must have been great to close up the gap existing between them thirteen years ago and to now outrank the winter-wheat flour when that flour has made good progress itself. The winter-wheat millers have generally adopted the improvements made by the spring-wheat millers, but the appliances are not as well adapted to milling winter wheat as to spring wheat. No important improvements have been made by the winter-wheat millers that we know of.

Two schedules, one from Indiana and one from Minnesota, give very complete details as to the different items of cost in manufacturing a barrel of flour. The following is the estimate on a hundred barrels of flour at the Indiana mill:

Grade.	Number of barrels.	Price per barrel.	Total selling price.
First quality.....	40	\$6 00	\$240 00
Second quality.....	50	5 50	275 00
Third quality.....	7	4 00	28 00
Fourth quality.....	3	3 00	9 00
Total			552 00

Value of offal, \$50; making, \$602.

Cost of manufacturing flour in Indiana.

Labor	barrel..	\$0 20
Cooperage.....	do....	35
Repairs.....	do....	05
Interest, drayage, insurance, etc	do....	40
Total.....		1 00
Cost per hundred barrels.....		\$100 00
Four hundred and fifty bushels wheat, at \$1 a bushel		450 00
Total.....		550 00
Profit		52 00

Division of cost of a barrel of flour in Minnesota.

	Per cent.
Wheat	82½
Barrel.....	7
Repairs, insurance, taxes, etc	3½
Labor	2
Profit	5
Total.....	100

This schedule states that the average value of flour of all grades, including offal, during the past 10 years has been \$6 per barrel. From the different returns received it appears that a fair percentage of the cost of labor at mill to a barrel of flour, not including carriage, is from 2 to 3 per cent. One of the best returns received, which bears evidence of being very complete and exact, places it at $2\frac{2}{10}$ per cent. This is borne out by others.

Efficiency of labor.—There has been little increase in the efficiency of labor, except such as comes from experience and discipline. There has been an improvement in some cases growing out of a demand for a better grade of flour, which has compelled the employment of men of more skill. One firm in Georgia notes that there has been a marked decrease in the efficiency of the labor of less-skilled employes, growing out of the increased demand for labor in that section, which has made the employes independent and disinclined to follow instructions. An establishment in Maryland notes that there has been a marked decrease arising from an endeavor of the workmen to rear and educate their children for society rather than for the industrial pursuits of life.

Labor-saving machinery.—As has already been noted, the improvements in the manufacture of flour have been very great, too great, indeed, to permit of a discussion of them here. (a) The general effect of this labor-saving machinery has been greatly to improve the quality of flour rather than to save labor. Wages have not been reduced, nor has there been a lessening in the cost of production. As a rule, the number of men employed has increased, owing to the increased demand, though there has been a great saving of labor. One party, in speaking of these improvements, says that the machinery has improved the quality but not diminished the amount of labor employed in the production; it has, on the contrary, largely diminished the amount of product to a given amount of labor. Some of the machines, as flour-packers, have somewhat decreased the amount of labor employed. One party states that the quality of flour has increased about 50 per cent., while the quantity per run of stone has been reduced about 33 per cent. The improvements have had no effect upon labor or wages, except that there is somewhat less work for the men.

a See *Report on the Flour-milling Industry*, by Mr. Knight Neftel, C. E., in Vol. III, Agriculture, of the series of the Tenth Census reports.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Sperry & Co., Stockton, California.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Miller.....	Day....	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00
Assistant miller.....	do....	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
Packer.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Millwright.....	do....	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50
Stone-dresser.....	do....	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50
Engineer.....	do....	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00
Fireman.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Apprentice.....	do....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Teamster.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Watchman.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Laborer.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Machineman.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50

REMARKS.—Though these works were established in 1852, rates of wages are given only from 1871. The statement is made, however, that the wages in the table will cover the rates from 1867. Prior to that time the average rate paid to laboring men was about \$3 per day. Millers and mechanics of all classes, from 1852 to 1867, received \$5 per day. The head miller was paid \$3,000 per year from 1853 to 1857. All kinds of mechanical labor were in good demand at high wages in the vicinity of this mill from 1852 to 1865. From the completion of the Pacific railroad can be dated the beginning of the reduction in wages of all kinds. Though the proprietors be-

lieve they could procure workmen at a lower average than they are paying, they have not deemed it best to do so, preferring to have good men who will remain permanently in their employ.

Since the establishment of the works payments have been weekly and in cash.

Millers and engineers work 12 hours a day, clerks 10, and laborers from 10 to 12.

This mill has run about 10 months a year.

The selling price of a barrel of flour in 1880 is given as \$5, and the cost of labor to a barrel, $22\frac{1}{2}$ cents.

An establishment in California.

Classes of employés.	Unit of payment.	DATES.																			
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.
Miller	Day	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00
Assistant miller	do	4 00	5 00.	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
Packer	do	3 50	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00
Millwright	do	4 00	4 00	4 00	4 00	4 00	4 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
Stone-dresser	do	3 50- 4 00	4 00	4 00	4 00	4 00	4 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00	4 00- 5 00
Engineer	do	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
Fireman	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Teamster	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Watchman	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Laborer	do	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00

REMARKS.—The slight variation in the rates of wages in the years covered by this schedule will be noted. The wages of the miller were reduced in 1868 from \$6 a day to \$5 a day; of assistant millers in 1880, from \$5 to \$4; of packers in the same year, from \$4 to \$3 50; of stone-dressers in 1875, from \$4 and \$5 to \$4, and in 1880, from \$4 to \$3 50 and \$4. These are the only changes that have been made in the 20 years for which rates of wages are given.

The following statement shows the range of prices of flour, middlings, and bran for the periods named. They are not average prices:

Year.	Flour, per barrel.	Middlings, per ton of 2,000 lbs.	Bran, per ton of 2,000 lbs.
1860....	\$5 00 to \$7 00	\$10 00 to \$32 00	\$17 00 to \$30 00
1865.....	6 00 to 16 00	22 00 to 65 00	17 00 to 00
1870....	6 00	18 00 to 32 00	14 00 to 24 00
1875.....	5 37½	30 00 to 35 00	21 00 to 27 00
1880.....	4 75 to 5 02½	15 00	12 00

Payments are weekly and in cash.

This mill runs night and day. All mill labor works 12 hours a day; outside workmen, such as teamsters, etc., 10 hours a day.

From 1861 to 1865 the mill averaged 8 months a year; from 1866 to 1870, 11½ months; from 1871 to 1875, 11½ months, and from 1876 to 1880, 12 months. The causes of the irregularity have been the removal of the mill, and fires.

The labor cost per barrel of flour, and percentage of wages to cost, are given in the subjoined table:

Year.	Labor cost.	Percentage of wages to cost.
		<i>Per cent.</i>
1860.....	\$0 30	5
1865.....	25	2½
1870.....	25	4½
1875.....	25	4½
1880.....	25	4½

Mason & Hottell, Fort Collins, Colorado.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Miller.....	Day.....	\$2 88	\$2 88	\$2 88	\$2 88	\$2 75	\$2 75	\$2 75	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Assistant miller.....	do.....	2 30	2 30	2 30	2 30	2 50	2 50	2 50	2 75	2 75	2 75	2 75	2 75	2 75
Packer.....	do.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Millwright.....	do.....	3 20	3 20	4 20	4 00	4 00	4 00	4 00	4 25	4 25	4 25	4 00	4 00	4 00
Stone-dresser.....	do.....	3 00	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	3 00	3 00	3 00
Engineer.....	do.....	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	3 00	3 00	3 00
Fireman.....	do.....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Apprentice.....	do.....	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 50	1 50	1 50	1 33	1 33	1 33
Teamster.....	do.....	1 00	1 00	1 00	1 00	2 00	2 00	2 00	2 00	2 00	2 00	1 00	1 00	1 00
Watchman.....	do.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Laborer.....	do.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Machineman.....	do.....											3 50	3 50	3 50

REMARKS.—All classes work 12 hours a day, except millwrights, stone-dressers, and teamsters, who work 10 hours.

The works have been in operation an average of 9 months a year. Scarcity of wheat and repairs have caused this irregularity.

In connection with the table below it is stated that the cost of labor to a sack of flour is 10 cents.

The following prices of flour, and bran and shorts, are given in this schedule:

Year.	Flour, per sack.	Bran and shorts.
1868.....	\$3 25	\$7 50
1870.....	3 00	7 00
1875.....	3 95	12 00
1880.....	\$2 25 to \$4 75	\$8 00 to \$20 00

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

Clark & Bowen, Petersburg, Colorado.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1870.	1878.	1877.	1870.	1875.	1874.
Miller	Day	\$4 80	\$4 80	\$4 80	\$4 80	\$4 80	\$4 80	\$4 60
Assistant miller	do	2 75- 3 25	2 75- 3 25	2 50- 3 00	2 50- 2 75	2 25- 2 75	2 25- 2 75	2 25- 2 75
Packer	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Millwright	do	3 00- 5 00	3 00- 5 00	3 00- 5 00	3 00- 5 00	3 00- 5 00	3 00- 5 00	3 00- 5 00
Stone-dresser	do	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00
Teamster	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Laborer	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75

REMARKS.—The hours of labor at these works are 10 for common laborers and 12 for all others.

This mill has been in operation an average of 11 months a year since 1874, the date of its establishment. Being run by water, cold weather usually stops it about a month each year.

The statement is made in connection with this schedule that in 1879 the price of flour per hundred pounds was from \$2 to \$3 25; in 1880, from \$3 25 to \$3 75. Labor cost was 11 cents, which is about 5 per cent. of the total cost.

Smith, Northam & Robinson, Hartford, Connecticut.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1870.	1878.	1877.	1870.			1880.	1870.	1878.	1877.	1870.
Miller	Day	\$2 92	\$2 70	\$2 87	\$3 00	\$3 11	Engineer	Day	\$2 33	\$2 00	\$2 20	\$2 50	\$2 42
Assistant miller	do	1 38	1 00	1 00	1 00	1 00							

REMARKS.—This is one of the establishments making meal, referred to in the preliminary statement.

The hours of labor of miller and assistant miller are 10; of engineer, 11.

The price of meal per hundred weight in 1880 was \$1 10; the cost of labor was 1½ cent, and the percentage of wages to cost was 1½ cent.

An establishment in Dakota.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.
Miller	Day	\$3 40	\$3 40	\$3 40	\$3 40	\$3 40	\$3 40	\$3 40	\$3 40	\$3 40
Assistant miller	do	2 80½	2 30½	2 30½	2 30½	2 30½	2 30½	2 30½	2 30½	2 30½
Packer	do	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½
Engineer	do	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½
Teamster	do	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½
Watchman	do	06	06	06	06	06	06	06	06	06
Elevator-man	do	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½

REMARKS.—The hours of labor of all classes of employes for the years covered by the above tabulation are 12. The works have been

in operation an average of 9 months a year since 1872. The average price of a barrel of flour in 1880 was \$0; the labor cost, 50 cents.

Joseph Tatnall & Co., Stanton, Delaware.

Classes of employes.	Unit of payment.	DATES.																	
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1808.	1807.	1866.	1865.	1864.	1863.
Miller	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Assistant miller	do	1 53½	1 53½	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73
Packer	do	1 53½	1 53½	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73	1 73

REMARKS.—At these works employes are paid monthly in cash, and have the privilege of buying what flour or feed they wish at wholesale rates.

The hours of labor for all classes are 12 a day.

The works have been operated about 10½ months each year. In winter, ice interferes with the running of the mill; and during harvest, which is a slack time, repairs are made.

The labor cost of a barrel of flour is stated to be 12 cents.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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Gholstin & Zackry, Atlanta, Georgia.

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1880.	1879.	1878.	1877.			1880.	1879.	1878.	1877.
Miller	Day	\$3 84	\$3 84	\$3 84	\$3 84	Watchman	Day	\$1 00			
Packer	do	1 00	83½	83½	89½	Laborer	do	1 00			
Engineer	do	2 50	2 00	1 75	1 60½						

REMARKS.—This is the mill in Georgia referred to in the preliminary statement at which there are opportunities for over-time during six months of the year, equal to about one-eighth of regular time.

Payments are in cash, and weekly or monthly.
The mill has been in operation 11 months each year.
The labor cost of flour per barrel in 1877 is stated to be 12½ cents; in 1880, 17 cents.

Russell Hinckley, Belleville, Illinois.

Classes of employes.	Unit of payment.	DATES.															
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	
Miller	Day	\$3 84	\$3 84	\$3 84	\$1 80	\$1 80	\$1 80	\$1 80	\$5 75	\$5 75	\$5 75	\$5 75	\$5 75	\$5 75	\$5 75	\$5 75	
Assistant miller	do	3 08	3 08	3 08	3 08	3 08	3 08	3 08	3 08	3 08	3 08	3 08	3 08	3 84	3 84	3 40	
Packer	do	1 50	1 50	1 35	1 50	1 50	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	
Engineer	do	3 08	3 08	3 08	3 08	3 08	3 08	3 46	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84	
Fireman	do	1 35	1 35	1 35	1 50	1 50	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	
Teamster	do	1 75	1 75	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	
Watchman	do	1 00	1 00	1 00	1 30	1 30	1 30	1 30	1 50	1 50							
Laborer	do	1 25	1 25	1 25	1 25	1 25	1 40	1 40	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	

Classes of employes.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Miller	Day	\$4 80	\$3 84	\$3 08	\$1 02	\$1 73	\$1 02	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75
Assistant miller	do	3 08	2 87	2 30	1 73	1 51	1 73	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer	do	2 00	2 00	1 25	1 25	1 00	1 00	75	75	75	75	75	75	75	75	75	75
Engineer	do	2 87	2 50	1 92	1 54	1 15	1 54	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Fireman	do	1 75	1 75	1 25	1 00	75	1 00	75	75	75	75	75	75	75	75	75	75
Teamster	do	1 50	1 50	1 25	1 00	75	1 00	75	75	75	75	75	75	75	75	75	75
Watchman	do																
Laborer	do	1 50	1 50	1 25	1 00	75	1 00	60	60	60	60	60	60	60	60	60	60

REMARKS.—At these works the most highly paid employes receive their wages monthly, the rest weekly.

The hours of labor are 12 for all classes except common laborers, for whom they are 10.

The mill has been in operation on an average nearly 12 months a year since 1855, counting 12 hours' run as a day.

The following statements regarding prices for January of each year and labor cost are given:

Year.	Selling price of flour per barrel.	Labor cost of flour per barrel.
1850	\$0 00	\$0 65
1855	8 50	75
1860	6 00	78
1865	10 00	80
1870	6 00	83
1875	6 00	61
1880	7 00	52

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

Conkling & Co., Springfield, Illinois.

Classes of employes.	Unit of payment.	DATES.							
		1881.	1880.	1870.	1878.	1877.	1876.	1875.	1874.
Miller	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Engineer	do	1 76	1 76	1 76	1 76	1 76	1 76	1 76	1 70
Fireman	do	1 38	1 38	1 38	1 38	1 38	1 38	1 38	1 38
Teamster	do	1 08	1 08	1 08	1 08	1 08	1 08	1 08	1 08
Laborer	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—This establishment produces hominy, corn flour and meal, but no wheat flour.

There has been considerable over-time made. During the last two years covered by the tabulation the mill has averaged 4 hours per day extra for a part of the year. These extra earnings have not been included in the table.

Payments are weekly in cash.

All classes work 10 hours a day.

The establishment has averaged 10 months a year. The idleness has been owing to lack of corn and to necessary repairs.

In the years covered by the tabulation, hominy has sold for from \$3 to \$3 75 per barrel at the mill, pearl meal, \$4 per barrel, and feed from 60 to 70 cents per hundred pounds. In 1880 the establishment shipped 30,000 barrels of hominy and meal, the pay-roll being \$6,000. This would make an average of 20 cents per barrel for labor.

An establishment in Illinois.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Miller	Day	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$5 77	\$5 77	\$5 77
Assistant miller .....	..do	3 40	3 46	3 46	3 46	3 40	3 40	3 46	3 40	3 46	3 46	3 46	3 46	4 80	4 80	4 80
Packer .....	..do	2 00	1 66	1 66	1 66	1 06	1 60	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Millwright .....	..do	2 50	2 50	2 50	2 50	2 50										
Stone-dresser .....	..do	3 07	3 07	3 07	3 07	3 07	3 07	3 07	3 07	3 07	3 07	3 00	3 00	3 00	3 00	3 00
Engineer .....	..do	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 00	3 00	3 00	3 00	3 00
Fireman .....	..do	2 00	1 66½	1 66½	1 66½	1 66½	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Apprentice .....	..do	00	00	00	00	00	00	00	00	00	00	50	50	50	50	50
Teamster .....	..do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Watchman .....	..do	1 33½	1 33½	1 33½	1 33½	1 33½	1 33½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½
Laborer .....	..do	1 33½	1 33½	1 33½	1 33½	1 33½	1 33½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½
Machine-man .....	..do	1 33½	1 33½	1 33½	1 33½	1 33½	1 33½	1 66½	1 66½	1 66½	1 66½					

REMARKS.—At this mill no deductions are made from the wages of the employes in cases of casual absence.

Payments have always been weekly and in cash.

Laborers work 10 hours a day, and other classes 12 hours.

The works have been in operation on an average 10 months a year, the cause of idleness being repairs, but it is stated that employes are retained at full pay.

The following statement is given as to the selling price, labor cost, and percentage of wages to cost of flour per barrel:

Year.	Selling price.	Labor cost.	Percentage of wages to cost.
1870.....	\$5 75	\$0 30	Per cent. 5
1875.....	5 40	20	4
1880.....	4 25	15	3

Hoagland & Tresselt, Fort Wayne, Indiana.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Miller	Day	\$2 30	\$2 30	\$2 30	\$2 56	\$2 56	\$2 56	\$2 50	\$2 88	\$3 20	\$3 20	\$3 20	\$3 00	\$3 00	\$3 00	\$3 00
Assistant miller	do	1 54- 2 00	1 54- 2 00	1 54- 2 00	1 54- 2 00	1 54- 2 00	1 54- 2 00	1 54- 2 00	1 54- 2 30	1 54- 2 30	1 54- 2 30	1 54- 2 30	2 00	2 00	2 00	2 00
Packer	do	1 25	1, 20	1 00	1 15	1 30	1 25	1 25	1 15	1 20	1 25	1 25	1 15	1 10	1 15	1 10
Millwright	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Stone-dresser	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Teamster	do	1 54	1 54	1 54	1 54	1 35	1 35	1 35	1 35	1 35	1 54	1 54	1 54	1 75	1 75	1 75
Watchman	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Laborer	do	1 15	1 15	1 15	1 15	1 35	1 35	1 35	1 35	1 54	1 54	1 54	1 25	1 25	1 25	1 25

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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Hoagland & Tresselt, Fort Wayne, Indiana—Continued.

Classes of employéa.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Miller	Day	\$3 50	\$3 50	\$3 50	\$3 00	\$3 00	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Assistant miller	do	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 60	1 60	1 60	1 60
Packer	do	1 50	1 45	1 35	1 30	1 25	1 25	1 25	1 20	1 15	1 20	95	90	85	1 00	1 00	1 05
Millwright.....	do	3 50	3 50	3 50	3 00	3 00	3 00	3 00	3 00	3 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Stone-dresser.....	do	2 25	2 25	2 25	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Teamster	do	1 75	1 75	1 75	1 50	1 50	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Watchman	do																
Laborer	do	1 50	1 50	1 50	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—This report was made up with great care, and is quite complete.

A portion of the employes are paid weekly; a few, those receiving the highest wages, monthly.

The millers have been employed since 1853 from 10 to 15 hours a day, depending upon the character of demand; all others, 10 hours.

The average number of months run per year since 1843 is given in the following table:

	Months.
1843 to 1870	9
1871 to 1875	6
1876 to 1880	6½
Year ending June 1, 1880	10

This mill is run by water-power. The chief causes of idleness have been insufficiency of water in the canal from which the power is taken and breakages in the canal and feeder-dam.

The following table gives the prices of several articles produced at this mill from 1850, together with the labor cost and percentage of wages to cost in the manufacture of flour:

Year.	PRICES OF PRODUCT.				Labor cost of flour per barrel.	Percentage of wages to cost of flour.
	Flour, per barrel.	Shorts, per ton.	Bran, per ton.	Corn meal, per bushel.		
1850...	\$5 00 to \$7 00	\$5 00	\$4 00	\$0 45	\$0 17	3½
1855...	7 00 to 9 00	7 00	6 00	50	17	2½
1860...	6 00 to 7 00	8 00	7 00	50	10	3½
1865...	7 50 to 10 00	10 00	9 00	50	25	3½
1870...	3 75 to 7 00	13 00	12 00	75	10	4½
1875...	4 00 to 7 25	14 00	13 00	50	10	4
1880...	3 00 to 8 00	14 00	13 00	60	21	5

Arnold, Thomas & Co., Huntington, Indiana.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Miller	Day	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Assistant miller	do	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 50	1 50	1 50
Packer	do	1 20	1 20	1 20	1 20	1 10	1 10	1 10	1 20	1 25	1 25
Engineer	do	2 00	2 00	2 00	1 66	1 66	1 66	1 66	2 00	2 00	2 00
Teamster	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25

REMARKS.—It is stated in this return that at these works millers and engineers make about 25 per cent. over-time. They receive the same pay as for regular work. Rates for this over-time are not included in the table.

Payments are weekly, part in cash and part in merchandise.

Millers and manager average 15 hours per day; all others, about 12 hours.

These works stop only in case of accident.

The schedule states that no man who drinks or smokes is employed. If it comes to the knowledge of the proprietor that any employe drinks he is immediately discharged.

The following are given as the selling prices since 1870 at the works for the articles named:

Year.	Flour, per barrel.	Bran, per 100 lbs.	Shorts, per 100 lbs.	Chop, per 100 lbs.	Meal, per 100 lbs.	Buckwheat flour, per 100 lbs.
1870 ..	\$0 00	\$1 00	\$1 20	\$1 40	\$1 50	\$2 80
1875...	6 00-6 80	60	75	1 00	1 00	3 00
1880...	5 50-6 20	60-80	80-1 00	1 00-1 20	1 00-1 30	4 15

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

Gibson & Co., Indianapolis, Indiana.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Miller	Day		\$5 00	\$5 00	\$4 00	\$4 00	\$4 00	\$1 00	\$3 50	\$3 50	\$3 50	\$3 50
Assistant miller	do		2 50	2 50	2 50	2 50	2 75	2 75	3 00	3 00	3 00	3 00
Engineer	do		3 50	3 50	3 50	3 50	3 00	3 00	3 00	3 00	3 00	3 00
Fireman	do		1 50	1 50	1 50	1 50	1 75	2 00	2 25	2 25	2 50	2 50
Laborer	do		1 25	1 25	1 25	1 25	1 50	1 75	2 00	2 00	2 25	2 25

REMARKS.—All payments at these works are weekly in cash. Millers and foreman are employed 12 hours a day; all other classes 10 hours.

The works have been in operation on an average of 11 months a

year since 1870. The idleness has been owing to the difficulty of selling winter-ground wheat; but, as is remarked in the preliminary statement, this difficulty has been overcome by warming the wheat before grinding.

Breckenridge & Jenkins, Lafayette, Indiana.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Miller	Day	\$2 00	\$2 00	\$2 00	\$2 00	\$2 50	\$2 50	\$2 33 $\frac{1}{3}$	\$2 50	\$2 50	\$2 75	\$2 75	\$2 75
Assistant miller	do	2 00	1 00 $\frac{1}{2}$	2 00— 1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$ — 1 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$ — 1 00 $\frac{1}{2}$	2 25— 1 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$ — 1 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$ — 1 00 $\frac{1}{2}$	2 50— 2 00 $\frac{1}{2}$	2 50— 2 00 $\frac{1}{2}$	2 50
Packer	do	1 50	1 50	1 50	1 50	1 50	1 50						
Millwright	do	3 25	3 25	3 25	3 25	3 25	3 25	3 50	3 50	3 50	3 50	3 50	3 50
Stone-dresser	do	2 00	2 00	2 00	2 00	2 25	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Teamster	do	1 50	1 50	1 50	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 83 $\frac{1}{3}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$
Laborer	do	75— 1 25	75— 1 25	75— 1 25	1 00— 1 50	1 00— 1 50	1 00— 1 00 $\frac{1}{2}$	1 25— 1 00 $\frac{1}{2}$	1 25— 1 00 $\frac{1}{2}$	1 25— 1 00 $\frac{1}{2}$	1 25— 1 00 $\frac{1}{2}$	1 25— 1 00 $\frac{1}{2}$	1 25— 1 00 $\frac{1}{2}$

Classes of employes.	Unit of payment.	DATES.											
		1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.
Miller	Day	\$2 50	\$2 50	\$2 50	\$2 50	2 50	\$2 00	\$1 00 $\frac{1}{2}$	\$1 00 $\frac{1}{2}$	\$1 44	\$1 44	\$1 44	.....
Assistant miller	do	2 50— 2 00	2 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$	2 50	50	1 75	1 35	1 35	1 15	1 15	1 15	.....
Packer	do .....												.....
Millwright	do	3 50	3 50	3 50	3 50	50	3 50	3 50	3 00				.....
Stone-dresser	do	2 50	2 50	2 50	2 50	25	2 25	2 00	2 00				.....
Teamster	do	1 00 $\frac{1}{2}$	2 00	2 00	2 00	2 00	1 50	1 15	1 15	1 15	1 15	1 15	.....
Laborer	do	1 25— 1 00 $\frac{1}{2}$	1 50— 1 10 $\frac{1}{2}$	1 50— 1 10 $\frac{1}{2}$	1 50— 1 10 $\frac{1}{2}$	1 50— 1 10 $\frac{1}{2}$	1 25— 1 00	1 00— 75	1 00— 75	1 00— 75	1 00— 75	1 00— 75	.....

REMARKS.—At these works there have been some opportunities for over-time. These would increase the regular wages but slightly. Payments since 1858 have been weekly in cash. Millers and foremen are employed 12 hours a day; all other classes 10 hours. Prior to 1864 the working hours of millers were 14 a day; since that time they have been 12 hours.

From 1858 to 1860 the works were in operation on an average but 10 months a year; since that time, however, they have run with great regularity 12 months.

As this mill is run by water-power, the expenses in connection with power that would be incurred in a steam-mill are, of course, not considered.

The following statement as to selling price and labor cost of flour is given:

Year.	Selling price of flour per barrel.	Labor cost of flour per barrel.
1860.....	\$5 50	\$0 10
1865.....	10 00	15
1870.....	6 50	15
1875.....	7 00	12
1880.....	6 50	12

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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McDonald & Co., New Albany, Indiana.

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1880.	1879.	1878.	1877.			1880.	1879.	1878.	1877.
Miller	Day ...	\$2 50	\$3 00	\$3 00	\$3 00	Engineer	Day ...	\$1 50	\$1 50	\$1 50	\$1 50
Assistant miller	do ...	2 00	2 00	2 00	2 00	Teamster	do ...	1 00	1 00	1 00	1 00
Packer	do ...	1 25	1 25	1 25	1 25	Watchman	do ...	1 25	1 25	1 25	1 25
Millwright	do ...	3 00	3 00	3 00	3 00	Laborer	do ...	1 25	1 25	1 25	1 25
Stone-dresser	do ...	2 00- 2 50	2 00- 2 50	2 00- 2 50	2 00- 2 50	Machineman	do ...	3 00	3 00	3 00	3 00

REMARKS.—Payments at this establishment are weekly in cash.
When the mill is running double time, all hands work 12 hours a day; when on single time, 13 hours.

The works have been in operation an average of 8 months each year since 1877.

The following statement shows the price of flour for 1877 and 1880, labor cost, and percentage of wages to cost:

Year.	Price of flour per barrel.	Labor cost of flour per barrel.	Percentage of wages to cost.
1877.....	\$0 32	\$0 20	Per cent. 3½
1880.....	5 94	20	3½

J. A. Foreman, Muscogee, Indian territory.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Miller	Day ...	\$1 02				\$1 02			\$2 30
Engineer	do ...	1 15				1 15			1 54
Laborer	do ...	70				70			70

REMARKS.—But few rates of wages are given in the above table, but as it is the only one from the Indian territory, it has been included.

In addition to the above rates of wages, all employes are boarded.

All payments are weekly in cash, the statement being made that the men are better satisfied when they get cash.

The hours of labor have always been 11, and the establishment has run regularly 12 months in the year.

A. W. Linaberry, Bloomfield, Iowa.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Miller	Day ...		\$1 35	\$1 35	\$1 35	\$1 35	\$1 02	\$1 02	\$1 02	\$2 30	\$2 30	\$2 30
Packer	do ...		90	90	1 15	1 15	1 15	1 15	1 15	1 35	1 35	1 35
Engineer	do ...		1 35	1 35	1 35	1 35	1 50	1 50	1 50	1 75	1 75	1 75
Apprentice	do ...		30	30	38	38	38	40	40	01	01	01
Teamster	do ...		2 50	2 50	2 50	2 50	3 00	3 00	3 00	4 00	4 00	4 00
Laborer	do ...		90	90	1 15	1 15	1 15	1 15	1 15	1 35	1 35	1 35

REMARKS.—At some seasons of the year there is over-time at this mill, and at others short time. The proprietor, however, has always permitted employes to count full time for the whole year, allowing the over-work to balance short time. The engineer receives house-free, and this has been considered in the table.

Workmen are paid on application, with a settlement at the end of each month, 75 per cent. in cash and the balance in merchandise.

Prior to the year 1875 the workmen were paid in orders on various stores, but since that time the establishment has had a store of its own.

The works have been in operation on an average 12 months from 1870 to 1875, and 10 months from 1876 to 1880.

The following table gives the selling price of some of the articles produced at this mill:

Year.	Flour, best grade, per cwt.	Corn meal, per cwt.	Rye flour, per cwt.	Chop, per cwt.	Shorts, per cwt.	Bran, per cwt.
1870.....	\$4 00	\$1 50	\$2 75	\$1 00	\$1 25	\$1 00
1875.....	3 50	1 00	2 75	80	1 00	75
1880.....	3 00	90	2 50	60	75	50

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

H. G. Van Meter, De Soto, Iowa.

Classes of employes.	Unit of payment.	DATES.																			
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.
Miller	Day	\$2 30	\$2 00	\$1 54	\$1 75	\$1 92	\$1 75	\$1 50	\$1 75	\$1 75	\$1 90	\$2 00	\$2 00	\$2 20	\$2 30	\$2 70	\$2 87	\$2 87	\$1 73	\$1 15	
Assistant miller.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	2 00	2 00	1 50	1 20	1 25	1 00	1 00	60	
Millwright.....	do	2 00	2 00	1 50	2 00	2 00	1 75	1 50	1 75	1 75	1 75	1 75	2 00	2 00	2 25	2 50	2 50	2 00	1 75	1 50	
Teamster	do	1 00	1 00	80	80	80	1 00	1 00	90	90	90	90	1 00	1 00	1 00	1 20	1 25	1 00	1 00	60	
Laborer	do	76- 1 00	1 00	65- 1 00	1 00	96	75	75	80	80	76- 90	90	1 00	1 00	76- 1 00	1 20	96- 1 25	96- 1 00	65- 1 00	50- 60	

REMARKS.—There are some opportunities at this mill for over-time in making repairs, which have not been included in the wages given. Ordinary over-time work is paid for at regular rates, but for work done in the water, repairing wheel, etc., double prices are paid. The mill workmen receive free board, but this has not been included in the above rates. All are paid in cash on application.

The hours of labor at this establishment are very irregular, owing to the supply of water. Millers work from 6 to 15 hours a day, and laborers from 9 to 13.

The mill has been in operation an average of 12 months a year from 1861 to 1879. In 1879 it was rebuilding, and no work was done that year.

Nye & Willing, Northwood, Iowa.

Classes of employes.	Unit of payment.	DATES.					
		1880.	1879.	1878.	1877.	1876.	1875.
Miller.....	Day	\$2 12	\$2 12	\$2 12	\$2 12	\$2 12	\$2 12
Assistant miller.....	do	1 54	1 54	1 54	1 54	1 54	1 54
Apprentice.....	do	1 00	1 00	1 00	1 00	1 00	1 00
Teamster.....	do	1 00	1 00	1 00	1 00	1 00	1 00
Laborer.....	do	88- 1 00	88- 1 00	88- 1 00	88- 1 00	88- 1 00	88- 1 00

REMARKS.—At this mill no deductions are made in cases of absence from work for good cause, and no pay is given for extra work. All payments are monthly in cash. The mill runs double turn night and day, consequently the millers and mill-labor are employed 12 hours; common labor, 10. The mill has been in operation an aver-

age of 9 months a year. The cause of irregularity has been low water during the winter. It is stated that the average price of flour per barrel in 1875 and 1880 was \$4 50. The labor cost in 1875 was 20 cents, and in 1880, 10 cents, which in the former year would be $4\frac{1}{2}$ per cent. of the total cost; in the latter year, $2\frac{1}{2}$ per cent.

An establishment in Iowa.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Miller.....	Day	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Assistant miller.....	do	1 73	1 73	1 92	1 92	1 92	1 92	1 73	1 73	1 73	1 54
Packer.....	do	1 25	1 25	1 00	1 00	1 25	1 25	1 35	1 35	1 25	1 25
Millwright.....	do	2 75	2 75	3 00	3 00	2 75	2 75	2 50	2 50	2 75	2 75
Stone-dresser.....	do	1 75	2 00	2 00	2 50	2 50	2 75	2 75	3 00	3 00	3 00
Engineer.....	do	1 50	1 38	1 50	1 50	1 50	1 50	1 50	1 35	1 27	1 02
Apprentice.....	do	60	1 00	80	60	1 00	80	60	80	60	60
Teamster.....	do	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 50	1 50	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$
Watchman.....	do	1 25	1 00	1 00	1 35	1 35	1 25	1 25	1 25	1 25	1 25
Laborer.....	do	1 15	75	75	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Machineman.....	do	2 25	2 00	2 10	2 00	2 00	1 97 $\frac{1}{2}$	2 00	1 75	1 80	2 00

REMARKS.—At these works the millers and engineers have some opportunities for over-work, which would increase the wages about 3 per cent., but have not been included in the above tables.

The men are paid in cash, advances being made each week, with a settlement at the end of each month.

Millers, engineers, and apprentices work 12 hours a day; all others, 10. This establishment is in constant operation, except for two or three weeks each year, when the necessary repairs are made.

Below are the prices of several of the products of these works:

Year.	Wheat flour, per barrel.	Rye flour, per barrel.	Corn meal, per 100 lbs.	Chop feed, per ton.	Brnn and shorts, per ton.
1870.....	\$6 00	\$1 00	\$1 00	\$13 00	\$8 00
1875.....	5 50	5 40	1 00	14 00	10 00
1880.....	5 40	5 00	1 00	13 00	12 00

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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James S. Warden, Irving, Kansas.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Miller	Day	\$1 92	\$2 30	\$2 30	\$1 02	\$1 02	\$1 92	\$1 92
Assistant miller	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Laborer	do	58	58	58	58	58	58	58

REMARKS.—In addition to the wages given in the above table, the head miller receives house, garden, and some fuel free. The value of these allowances would be about \$6 per month, and has not been included in above wages. All employes are paid monthly

and in cash. The regular hours of labor are 12 each day. The millers, however, hold themselves in readiness to continue work into the night if necessary, but night-work is rare. Since 1874 the works have run regularly except for stoppages for repairs.

W. G. Anderson & Co., Grahamton, Kentucky.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Miller	Day	\$2 12½	.....	\$2 12½	\$2 12½	\$2 12½	\$2 50	\$2 50	\$2 50	\$3 00	\$3 00	\$3 00
Assistant miller	do	1 50	.....	1 50	1 50	1 50	1 50	1 00½	1 00½	1 00½	1 00½	1 00½
Millwright	do	3 00	.....	3 00	3 00	3 00	3 00	2 50	2 50	2 50	2 50	2 50
Laborer	do	70	.....	83½	1 00	1 08	1 08	1 08	1 00	1 00	1 00	1 00

REMARKS.—At this mill there are some opportunities for overtime. The employes have very cheap, almost nominal, house-rent, and garden land free, and are supplied with fuel at very low rates. The value of these has not been included in the above table.

Payments are weekly in cash.

All classes of employes work 11½ hours a day.

The following are the prices and labor cost of flour per barrel :

Year.	Prices.	Labor cost.
1870.....	\$7 00	\$0 50
1875.....	7 50	50
1880.....	5 50	50

J. H. Gambrill, Frederick, Maryland.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Miller	Day	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Assistant miller	do	75- 1 25	75- 1 25	75- 1 25	75- 1 25	75- 1 25	75- 1 25	75- 1 25	75- 1 25	75- 1 25	75- 1 25
Engineer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

REMARKS.—At this mill there are some allowances, such as fuel, garden, etc., free, which would increase the wages of first-class men about 15 per cent, but have not been included in the schedule.

All payments are weekly in cash.

From 1850 to 1860 the miller worked 18 hours a day; since then 14 hours; engineers and all other classes, 12 hours.

From 1851 to 1860 the mill ran an average of 11 months a year; from 1861 to 1865, 6 months; from 1866 to 1870, 11 months; from 1871 to 1875, 8 months; from 1876 to 1880, 10 months.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

John Clee, Detroit, Michigan.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Miller.....	Day	\$2 50	\$2 50	\$2 25	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Assistant miller.....	do	1 50- 1 75	1 50- 1 75	1 25- 1 50	1 25- 1 50	1 25- 1 50	1 25- 1 50	1 25- 1 50	1 50- 1 75	1 50- 1 75	1 50- 1 75
Packer.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Millwright.....	do	3 00			3 00						
Engineer.....	do	2 50	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Teamster.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Laborer.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

REMARKS.—Since 1868, the date of the establishment of this mill, payments have been made weekly in cash.

All classes of labor are employed ten hours a day.
The mill has run regularly 12 months a year.

An establishment in Michigan.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Miller.....	Day	\$1 54	\$1 54	\$1 54	\$1 54	\$1 79	\$1 92	\$1 92
Packer.....	do	2 19	1 75	1 24	1 82	1 44	1 35	a 1 30
Teamster.....	do	86	86	86	1 02	1 92	1 92	b 1 92

a Flour-packers are paid per barrel, 3 cents. The above are the *average daily earnings*.

b From 1874 to 1877 wages included team. From 1877 to 1880, without team.

REMARKS.—At this mill payments are in cash on application, with settlements at the end of each month.

Millers are employed 12 hours a day; laborers, 10 hours.

The mill has run about 9 months a year since 1874, night and day, but employes make full time whether the mill is in operation or not, they being given other employment.

Mazeppa Mill Company, Mazeppa, Minnesota.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Miller.....	Day	\$3 84	\$3 84	\$3 20	\$3 20	\$2 87	Fireman.....	Day	\$1 65	\$1 65	\$1 50	\$1 50	\$1 50
Assistant miller.....	do	2 12	1 92	1 92	1 92	1 92	Teamster.....	do	1 05	1 50	1 50	1 50	1 50
Packer.....	do	1 75	1 05	1 05	1 65	1 65	Watchman.....	do	1 50	1 50	1 50	1 50	1 50
Millwright.....	do	3 00	2 75	2 50	2 50	2 50	Laborer.....	do	1 25	1 25	1 30	1 30	1 30
Engineer.....	do	3 50	3 00	3 00	3 00	3 00	Machineman.....	do	2 25	2 00	2 00	2 00	2 00

REMARKS.—At this mill salaried men are paid monthly; other employes weekly.

This mill runs two sets of hands, night and day, each set working 12 hours. Laborers about the mill, however, are employed only 10 hours.

The mill runs regularly, except the necessary stoppages for repairs.

Regarding the labor cost, the statement is made that this mill uses both steam- and water-power. The mill is situated in a small

town, and secures labor at less cost than in places as large as Minneapolis. The total cost of a barrel of flour—that is, for labor, barrels, wood, oil, etc.—is very nearly the same from year to year, but the cost of wheat differs so much that it is difficult to arrive at the percentage of wages to cost. It is estimated to be 2.8 per cent. The total cost is 27 cents a barrel, including every thing except wheat and the cost of the barrel; that is, labor, fuel, oil, repairs, interest, discount on drafts, book-keeper, taxes, insurance—in fact, every thing that is merged in the expense account.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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An establishment in Minnesota.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1870.	1878.	1877.	1876.	1875.	1874.
Miller	Day	\$8 01½	\$6 41	\$6 41	\$6 41	\$6 41	\$5 76	\$6 41
Assistant miller	do	3 00	3 00	3 00	3 00	2 75	2 75	2 75
Packer	do	3 00	2 50	2 50	2 50	2 50	2 50	2 75
Millwright	do	3 75	3 75	3 50	3 50	3 50	3 50	3 50
Stone dresser	do	3 00	2 75- 2 50	2 88½	2 88½	3 00	3 07½	3 46
Watchman	do	2 00	2 00					
Machineman	do	2 75	2 00	2 00	2 00	2 00	3 00	3 27

REMARKS.—At this mill there are some opportunities for overtime. The amount so earned would increase the wages, however, but slightly.

All classes work 10 hours a day, and the mill is in operation an average of 10 months a year.

Payments are weekly in cash.

The labor cost of a barrel of flour is stated to be 28 cents. For the year ending September 1, 1880, this was 63 per cent. of the total cost of product exclusive of materials, and 29 per cent. of the total cost including materials.

An establishment in Minnesota.

Classes of employes.	Unit of payment.	DATES.						Classes of employes.	Unit of payment.	DATES.					
		1880.	1870.	1878.	1877.	1876.	1875.			1880.	1870.	1878.	1877.	1876.	1875.
Miller	Day	\$2 87	\$2 87	\$3 08	\$2 87	\$2 87	\$3 84	Engineer	Day	\$3 84	\$4 80	\$3 84	\$3 84	\$3 84	\$3 84
Assistant miller	do	1 54	1 54	1 54	1 54	1 54	1 54	Fireman	do	1 54	1 54	1 54	1 54	1 54	1 92
Packer	do	1 54	1 54	1 40	1 40	1 40	1 40	Teamster	do	1 15	1 15	1 15	1 15	1 15	1 15
Millwright	do	2 00	2 00	2 00	2 00	2 00	2 00	Watchman	do	1 15	1 15	1 15	1 15	1 15	1 15
Stone-dresser	do	1 54	1 54	1 54	1 54	1 54	1 54	Laborer	do	1 15	1 15	1 15	1 35	1 35	1 54

REMARKS.—At this establishment payments are weekly in cash. From 1874 to 1879 this mill was in operation 10 months a year. During 1880 there was a change in the firm and it was in operation but 8 months.

Laborers work 10 hours a day; all other classes 12 hours. The selling price of a barrel of flour in 1880 is given in the statement appended to this return as \$6 80, and the labor cost as 20 cents a barrel.

Theo. Hoberecht, Boonville, Missouri.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1870.	1878.	1877.	1876.			1880.	1870.	1878.	1877.	1876.
Miller	Day	\$1 54	\$1 54	\$1 54	\$1 54	\$1 54	Engineer	Day	\$1 35	\$1 35	\$1 35	\$1 35	\$1 35
Packer	do	1 00	1 00	1 00	1 00	1 00	Teamster	do	1 15	1 15	1 15	1 15	1 15
Millwright	do	3 00- 3 50	3 00- 3 50	3 00- 3 50	3 00- 3 50	3 00- 3 50	Machineman	do	3 00- 3 50	3 00- 3 50	3 00- 3 50	3 00- 3 50	3 00- 3 50

REMARKS.—At this mill payments are monthly, part in cash and part in merchandise, the proportion of each not being stated in the schedule.

All classes are employed 11 hours a day for 11 months in the year. The price of flour in 1876 was \$5 25; in 1880, \$4 75. The labor cost for both years was 20 cents a barrel.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

T. A. & William Bray, Pay Down, Missouri.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Miller.....	Day		\$1 00	\$1 25	\$1 25	\$1 25	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 25	\$1 25	\$1 25	\$1 25	\$1 35
Millwright.....	do	\$2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50	3 00	3 00	3 00	.....	.....
Laborer.....	do	75	75	75	75	75	75	75	75	75	75	1 00	1 00	1 00	1 00	1 25

REMARKS.—There are but very few opportunities for over-time at this mill, and such as there have been would not increase the wages in the above table over 5 per cent.

Since 1865 all payments have been weekly in cash.

In 1865 the hours of labor were from 10 to 12; since that date 10. In 1865 the price of flour per hundred weight was \$5 50; in 1870, \$3; in 1875, \$2 50; and in 1880, \$2 50. The labor cost per barrel, including also the use of machinery, is given at 25 cents.

An establishment in Missouri.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Miller.....	Day	\$7 00	\$7 00	\$7 00	\$7 00	\$7 00	\$7 00	\$7 00	\$7 00	\$7 00	\$7 00
Assistant miller.....	do	3 72	3 72	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84
Packer.....	do	2 33½	2 33½	2 58½	2 58½	2 58½	2 58½	2 58½	2 58½	2 58½	2 58½
Engineer.....	do	4 12	4 12	4 80	4 80	4 80	4 80	4 80	4 80	4 80	4 80
Fireman.....	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Laborer.....	do	1 00½	1 00½	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00

REMARKS.—The mill runs regularly 12 months a year. When it is idle from any cause the workmen are given employment at other occupations.

All payments are weekly in cash.

Since 1871, shipping clerk, laborers, and barrel-nailers work 10 hours a day; all other classes, 12 hours.

Charles Kemler, Winnemucca, Nevada.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Miller.....	Day	\$5 50	\$5 50	\$5 50	\$5 50	\$5 50	\$5 50	\$5 50	\$5 50
Packer.....	do	1 53½	1 53½	1 53½	1 53½	1 53½	1 53½	1 53½	1 53½
Engineer.....	do	5 50	5 50	5 50	5 50	5 50	5 50	5 50	5 50
Fireman.....	do	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00
Teamster.....	do	1 53½	1 53½	1 53½	1 53½	1 53½	1 53½	1 53½	1 53½
Watchman.....	do	1 84½	1 84½	1 84½	1 84½	1 84½	1 84½	1 84½	1 84½

REMARKS.—All employes, except miller and engineer, are boarded by the mill, \$1 a day being deducted from the above rates for board.

Since 1873 the mill has been in operation on an average but seven months a year, not enough wheat being raised in the section in which the mill is situated to keep it running steadily.

The following are the selling prices of several articles produced at this mill:

Year.	Flour, per ton.	Barley, ground, per ton.	Bran, per ton.	Middlings, per ton.
1873.....	\$100 00	\$60 00	\$40 00	\$50 00
1875.....	100 00	60 00	40 00	50 00
1880.....	80 00	45 00	35 00	40 00

H. Huning, Albuquerque, New Mexico.

Classes of employes.	Unit of payment.	DATES.																
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.
Miller.....	Day	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$2 87	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84
Engineer.....	do	2 87	2 87	2 87	2 87	2 87	2 87	2 87	2 87	2 87	2 87	2 87	2 87	3 84	3 84	3 84	3 84	3 84
Laborer.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 50	1 50	1 50	1 50	1 50

REMARKS.—At this mill there has been but one change in rates of wages since 1845, a reduction taking place between 1868 and 1869.

The workmen are paid on application in cash or merchandise, at their option.

Skilled labor since 1865 has been employed an average of 1½ hours a day; common labor from sunrise to sunset.

The mill has been in operation about 8 months a year.

Flour sold in 1880 for \$4 a hundred weight.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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John Garwood, Batavia, New York.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Miller	Day	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50
Apprentice	do	10½	10½	10½	10½	10½	10½	10½	10½	10½	10½	10½	10½	10½
Teamster	do	09-76	09-76	09-76	09-76	09-76	09-76	09-76	09-76	09-76	09-76	09-76	09-76	09-76

REMARKS.—At this establishment all employes receive board free. This would add about \$3 per week to the above rates.

All employes except teamsters are paid weekly. The teamster is paid upon application, with yearly settlements.

The hours of labor are irregular, depending upon the supply of water. Millers work from 10 to 15 hours per day; teamsters, 14.

Since 1868 the mill has been in operation on an average but 7 months a year, owing to the irregular supply of water.

The following prices of product are given:

Year.	Flour, per barrel.	Middlings, per ton.	Bran, per ton.
1870	\$0 50	\$20 00	\$20 00
1875	0 00	22 00	22 00
1880	0 50	.....	16 00

Thornton & Chester, Buffalo, New York.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Miller	Day	\$0 00	\$0 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00
Assistant miller	do	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30
Packer	do	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Millwright	do	3 00	3 00	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Stone-dresser	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Engineer	do	4 00	4 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Fireman	do	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Teamster	do	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Watchman	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Laborer.....	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARKS.—At this mill employes are paid weekly in cash.

All classes work 10 hours a day.

The mill has averaged full time since 1868.

The average price of flour since 1868 is stated to be \$6 per barrel, and of corn meal \$1 per hundred pounds. The labor cost of flour per barrel is given at 25 to 30 cents.

Farley, Ferguson & Wilson, Rochester, New York.

Classes of employes.	Unit of payment.	DATES.						Classes of employes.	Unit of payment.	DATES.					
		1880.	1879.	1878.	1877.	1876.	1875.			1880.	1879.	1878.	1877.	1876.	1875.
Miller	Day	\$2 00	\$2 00	\$2 10¢	\$2 10¢	\$2 10¢	\$2 10¢	Teamster	Day	\$1 10¢	\$1 10¢	\$1 33¢	\$1 33¢	\$1 50	\$1 50
Packer	do	1 10¢	1 10¢	1 33¢	1 33¢	1 33¢	1 33¢	Laborer	do	1 10¢	1 10¢	1 33¢	1 33¢	1 50	1 50
Apprentice	do	1 00	1 00	1 00	1 00	1 00	1 00								

REMARKS.—All payments are weekly in cash.

Millers work from 10 to 12 hours a day; all other classes 10 hours.

It is remarked in this return that during 1875, 1876, and 1877 this mill ran night and day. In 1878, 1879, and 1880 it rarely ran at night; the cause of this change is stated to have been the falling off in business resulting from unjust freight discrimination by railroad companies.

The following prices of flour per barrel are given:

Year.	New-process flour.	White-wheat flour.	Amber flour.	Graham flour.
1875	\$8 50	\$6 50	\$0 25	\$4 50
1880	7 75	6 00	5 75	8 50

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

William Anderson, Hamilton, Ohio.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Miller.....	Day	\$2 70	\$2 70	\$2 75	\$3 75	\$2 75	\$2 75	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 20	\$3 00	\$3 00	\$3 00
Assistant miller .....	...do	2 00	2 00	2 00	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30	2 30
Teamster .....	...do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARKS.—At this mill since 1850 all payments have been in cash on application.

All classes of labor have been employed 12 hours a day 12 months in the year.

Raney, Sheal & Co., Steubenville, Ohio.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1860.
Miller.....	Day	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36	\$3 36
Assistant miller	do	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35	2 08- 1 35
Engineer.....	do	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00	2 50- 2 00
Teamster	do	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54
Laborer.....	do	06	06	06	06	06	06	06	06	06	06	06	06

REMARKS.—At this mill payments are monthly in cash. The mill runs night and day, with two sets of hands. Since 1870 it has run regularly 12 months a year.

The following are the prices and labor cost of flour and other products of this mill for the years named, as given in the statement accompanying this return:

Year.	SELLING PRICES.			
	Flour, per barrel.	Bran, per ton.	Chop, per ton.	Corn meal, per ton.
1873.....	\$7 80	\$22 00	\$30 00	\$30 00
1874.....	6 20	22 00	33 00	33 00
1875.....	7 25	22 00	33 00	33 00
1876.....	6 05	15 00	30 00	30 00
1877.....	7 10	16 00	.....	.....
1878.....	5 00	13 00	22 00	22 00
1879.....	5 25	12 00	21 00	21 00
1880.....	5 00	15 00	20 50	21 50

Year.	LABOR COST.				Percentage of wages to cost of flour.
	Flour, per barrel.	Bran, per ton.	Chop, per ton.	Corn meal, per ton.	
1875.....	\$0 30	\$0 50	\$0 50	\$0 50	Per cent. 4 1/2
1880.....	30	50	50	50	0

J. H. Foster & Co., Albany, Oregon.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Miller.....	Day		\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00
Assistant miller	do		3 50- 3 00	3 50- 3 00	3 50- 3 50	3 50- 3 00	3 50- 3 00	3 50- 3 00	3 50- 3 00	3 50- 3 00	3 50- 3 00	3 50- 3 00
Packer	do		2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Laborer.....	do		2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00

REMARKS.—This mill pays weekly in cash. The miller has no stated hours of labor; the assistant miller works 12 hours a day, and laborers work 10 hours.

From October to May this mill runs day and night; the balance of the year from 6 to 12 hours per day, and shuts down one month for repairs.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

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Pretz, Weinsheimer & Co., Allentown, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Miller.....	Day	\$1 00	\$0 90	\$1 25	\$1 75	\$1 75	\$1 50	\$1 50	\$1 75	\$1 75	\$1 50	\$1 50	\$1 75	\$2 25	\$1 75
Assistant miller.....	do				1 00	1 00	1 00	1 25	1 25	1 25	1 25	1 25	1 00	1 50	1 25
Stone-dresser.....	do							1 15	1 25	1 25	1 25	1 15	1 25	1 50	1 25
Apprentice.....	do	00	50	00		50	50							50	50
Teamster.....	do	1 00	90	1 15	1 25	1 25	1 25	1 10	1 00	1 00	1 00	1 10	1 35	1 35	1 25
Watchman.....	do	25	25	25	00	75	75	75	75	75	75		75	75	75
Laborer.....	do	75	50	1 00	1 00	95	1 00	95	1 00	1 00	1 00	95	1 00	1 25	1 00

REMARKS.—This mill pays monthly in cash.

All classes of labor work 12 hours a day.

It is stated in this return that from 1866 to 1870 this mill was in

operation 11 months a year; from 1871 to 1875, 12 months; from 1875 to 1880, 10 months. The cause of irregularity has been repairs and low water.

Crouch Brothers, Erie, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Miller.....	Day	\$3 20	\$2 75	\$2 75	\$2 88	\$2 88	\$3 33	\$3 33	\$3 33
Assistant miller.....	do	2 00	1 75	1 75	1 75	1 75	1 75	1 50	1 50
Packer.....	do	1 50	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Millwright.....	do	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
Stone-dresser.....	do	2 00	1 75	1 75	1 75	1 75	1 75	1 50	1 50
Engineer.....	do	3 20	2 75	2 75	3 20	3 20	3 20	2 88	2 88
Fireman.....	do	1 75	1 50	1 50	1 50	1 25	1 25	1 25	1 25
Apprentice.....	do	50	50	50					
Teamster.....	do	1 50	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Laborer.....	do	1 40	1 25	1 25	1 25	1 25	1 50	1 50	1 50

REMARKS.—All payments are weekly in cash.

All classes work 10 hours a day.

There have been some opportunities for over-time at this mill for

all employes except head miller. The value of this over-time is not included in the above rates. No further information was given in this return.

Buffat & Son, Knoxville, Tennessee.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Miller	Day	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	.....	\$1 00	\$1 00
Assistant miller .....	..do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	\$1 00	\$1 00
Engineer .....	..do	05	65	75	75	75	75	75	75	75	75	1 00	1 00	1 00	1 00	.....
Teamster .....	..do	58	58	58	58	58	58	58	58	58	58	58	58	58	58	.....

REMARKS.—The return states that at this mill there are some opportunities for over-time, which are not included in the above rates. Price and a half is paid for over-work. Millers and teamsters receive house-rent, land for garden, etc., free. This would increase millers' wages about 25 cents per day, and teamsters' about \$5 per month.

The hours of labor average 10 a day for all classes.

Payments are on application, with monthly settlements, and all in cash, except that the employes are allowed to purchase the products of the mill at wholesale rates.

From 1861 to 1870 the mill was in operation an average of 9 months a year; since that date, 12 months a year.

The following prices of product and labor cost are given in this schedule:

Year.	PRICES.				LABOR COST.		
	Flour, per 100 pounds.	Meal, per bushel, 48 pounds.	Feed, per 100 pounds.	Bran, per 100 pounds.	Flour, per 100 pounds.	Meal, per bushel, 48 pounds.	Feed, per 100 pounds.
1865.....	\$7 00	\$1 40		\$1 30			
1870.....	3 03	00		1 00	\$0 15	\$0 04	\$0 00
1875.....	3 05	70		1 00		4	0
1880.....	2 05	55	\$1 00	80	15	4	0

As these mills are run at times partly by steam, sometimes altogether by steam, and at other times altogether by water, it is diffi-

cult to give exact figures, as the cost varies with the manner of running the mill.

STATISTICS OF WAGES—FLOUR- AND GRIST-MILLS.

Elam, Chenery & Co., Fairview, Utah.

Classes of employés.	Unit of payment.	DATES.																		
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.
Miller	Day	\$3 50	\$3 50	\$3 50	\$3 50	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 50	\$4 50	\$4 50	\$4 50	\$4 50	\$5 00	\$5 00	\$6 00	\$6 00	\$6 00
Assistant miller	do	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 50	2 50	3 00	3 00	3 00
Teamster	do	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 50	2 50	2 00	2 00
Watchman	do	1 00	1 00	1 00	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	2 00	2 00	2 00
Laborer	do	75	75	75	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 25	1 50	1 50	1 50

REMARKS.—At this mill payments are monthly and all in cash, except that the employes are allowed to purchase the products of the mill at wholesale rates.

The men are employed from eight to ten hours a day 9 months in the year.

The labor cost of flour per 100 pounds, from 1865 to 1875, is stated to be 50 cents; in 1880, 30 cents.

The following are the prices of a number of articles produced by this mill for the years named:

Year.	Flour, per 100 pounds.	Shorts, per 100 pounds.	Bran, per 100 pounds.
1865.....	\$6 00	\$1 50	\$1 00
1870.....	5 00	1 25	80
1875.....	5 00	1 25	80
1880.....	3 75	1 00	75

M. & J. Pollock, Wheeling, West Virginia.

Classes of employes.	Unit of payment.	DATES.																	
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Miller	Day	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50
Packer	do	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	2 00
Stone-dresser	do	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	2 00
Engineer	do	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½
Laborer	do	1 16½	1 16½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	2 00	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½	2 00

REMARKS.—There have been but few opportunities for over-time at this establishment. Regular price is paid for extra work.

Payments are weekly in cash.

All classes of labor are employed 10 hours a day, and it is stated that the employes are satisfied with the 10-hour system, but would not consent to any increase, nor would the employers favor either an increase or a decrease.

From 1865 to 1875 the mill was operated about 8 months a year,

the irregularity being caused by light demand for product during the spring months. From 1876 to 1880 the mill ran 10½ months a year on an average, the increased demand in these years being due to better quality of product.

The labor cost of a barrel of flour is stated to be about 16 cents per barrel. The total cost per barrel, exclusive of wheat—i. e., the barrel, interest on capital, and services of the proprietors—is about 35 cents.

A. Syme, Menasha, Wisconsin.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Miller	Day		\$5 00	\$5 00	\$4 00	\$4 00	\$4 00	\$4 00	\$3 00	\$3 00	\$3 00	\$3 00
Assistant miller	do		2 25	2 25	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75
Laborer	do		1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARKS.—All payments at this mill are weekly in cash.

The mill runs 24 hours per day, and employs two sets of hands, each working 12 hours. Common laborers, however, are employed but 10 hours.

The mill has run an average of 11½ months a year, its stoppages being for necessary repairs.

The following statement, appended to the schedule, gives the prices of flour, labor cost, etc., since 1860:

Year.	Prices.	Labor cost.	Percentage of wages to cost.
1800.....	\$4 60	\$0 10	Per cent. 2.27
1865.....	4 75	11	2.45
1870.....	5 40	13	2.50
1875.....	5 50	13	2.45
1880.....	5 65	13	2.40

GAS AND GAS COKE.

Of the 22 schedules sent to the manufacturers of gas, but 7 were returned, of which 6 are tabulated. Of these, 1 was from Connecticut, 2 were from Indiana, and 1 each was from Maine, Massachusetts, and New Jersey. The schedules give the rates of wages paid in the manufacture only of gas; no rates are given for workmen employed in the distribution of gas. It will be observed that the division of labor in this industry is not very minute, nor is it by any means the same in the different establishments. The names given to the different classes of employes differ at different works. The stoker at the Fort Wayne works is the fireman at the New Jersey works; at one establishment, under the term "mechanic", are included all classes of labor except the common laborer.

Extra earnings or deductions.—At none of the works reporting are there any opportunities for extra earnings. One establishment reports that its workmen are furnished with fuel at rates 25 per cent. less than those of the regular dealers; and it is quite probable that this is true of all the works. There are no deductions for tools, under-hands, etc.

Payments.—The employes at all of the works are paid in cash. There is no regular interval of payment common to all these works, as will be seen by the following table:

Intervals of payment at gas-works.

Interval.	1880.	1875.	1870.	1865.	1860.	1855.	1850.	1845.
Weekly	2	2	2	2	2	2	2	.....
Semi-monthly....	2	2	2	1	1	1	1	1
Monthly	2	2	2	3	3	2	2	1
On application...	1	1	1	1	1	1	.....	.....

Hours of labor.—Gas manufacture, as a rule, is carried on day and night 7 days in the week, two gangs of men working 12 hours each. This would include in most cases both holidays and Sundays, though one establishment reports that it has given up Sunday work. Those employes not directly engaged in the making of the gas in some cases work but 10 hours. The hours of labor will be given under each tabulation.

Regularity of employment.—From the very character of this industry it is evident that the works must run continuously. Without exception, the 6 establishments reporting state that they run regularly 12 months each year. The demand for gas is much greater in the winter than in the summer, and more men are employed. The works run the entire year, but the production differs at different seasons.

Relation of wages and labor to selling price and cost.—See notes under each tabulation.

Efficiency of labor.—There has been no change in the efficiency of labor except such as grows out of experience.

Labor-saving machinery and improvements.—No labor-saving machinery has been introduced at any of the works reporting.

Wages at British gas-works.—The following tables, taken from the *Miscellaneous Statistics of the United Kingdom*, Part XI, giving the rates of wages paid at the gas-works of Great Britain and Ireland, hours of labor, etc., are inserted here for the purpose of comparison with our own tables. The tables are for 1880. As published, they include rates of wages for workmen engaged in labor outside of the gas-works, such as laying pipe, lamp-lighting, etc.; but as the statistics for the United States include only the labor engaged in the manufacture of gas, similar classes of workmen only are given in the British statistics.

It will be noted that the division of labor at the American gas-works is not so complete as at the English. The term "laborer" at the former includes, in many cases, several of the British classes of labor, such as retort laborers and men, coke porters and fillers, coal-wheelers, etc. The word "smith" in the British statistics is the same as blacksmith in the American, while "mechanic" in the American schedule includes such workmen as blacksmiths, carpenters, etc., and in one case all workmen except common laborers.

STATISTICS OF WAGES—GAS AND GAS COKE.

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Table showing rates of wages, hours of labor, etc., at the gas-works of Great Britain and Ireland.

Description of occupations.	Rates of wages.	Hours of labor.	Description of occupations.	Rates of wages.	Hours of labor.
BIRMINGHAM.			GLASGOW.		
	<i>Per week.</i>			<i>Per day.</i>	
Gas-makers, leading stokers, and firemen.....	\$0 20 to \$10 10		Gas-makers, leading stokers, and firemen.....	\$1 25	12
Stokers, ordinary.....	7 80		Stokers, ordinary.....	1 21	12
Retort laborers.....	5 08 to 6 53		Retortmen, coal-porters, and coke-fillers.....	85	12
Coal-porters.....	5 34 to 6 18		Carpenters and joiners.....	\$1 00 to 1 27	9
Coke-fillers.....	5 34 to 6 17		Bricklayers and retort-setters.....	1 37	9
Carpenters and joiners.....	7 20 to 8 23	54	Smiths.....	1 21	9
Bricklayers and retort-setters.....	8 43	54	Laborers.....	77	10
Smiths.....	7 20 to 8 71	54			
Laborers.....	4 80 to 5 08	54			
BRISTOL AND NEIGHBORHOOD.			LIVERPOOL.		
	<i>Per day.</i>			<i>Per week.</i>	
Stokers.....	\$1 03	8	Stokers, ordinary.....	\$8 47	56
Coal-porters and coke-fillers.....	83	8	Coke-fillers.....	7 20	84
Carpenters and joiners.....	97	10	Carpenters and joiners.....	8 23	55½
Bricklayers and retort-setters.....	1 21	10	Bricklayers and retort-setters.....	8 47	55½
Smiths.....	97	10	Smiths.....	7 74	55½
Laborers.....	73	10	Laborers.....	5 08	55½
			Boys.....	1 04	55½
DUBLIN.			LONDON.		
	<i>Per week.</i>				
Gas-makers and leading stokers.....	\$9 08	84	Leading stokers and firemen.....	9 20	
Firemen.....	10 80	84	Stokers, ordinary.....	8 71	
Stokers, ordinary.....	8 47	84	Retortmen.....	6 00	
Retortmen.....	6 53	84	Coal-porters.....	8 23	
Coal-wheelers.....	5 08	84	Coke-fillers.....	7 20	
Coke-fillers.....	4 86	55½	Carpenters.....	\$7 74 to 9 20	
Carpenters and joiners.....	8 71	53½	Bricklayers and retort-setters.....	7 74 to 9 20	
Bricklayers and retort-setters.....	8 71	53½	Smiths.....	9 07	
Smiths.....	7 74	53½	Laborers.....	6 05	
Laborers.....	4 86	55½			
Boys.....	1 04	53½			
EDINBURGH.			MANCHESTER.		
Gas-makers and leading stokers.....	9 08		Gas-makers, leading stokers, and firemen.....	9 50	70
Stokers, ordinary.....	7 50		Stokers, ordinary.....	8 47	70
Retortmen.....	6 21		Retortmen.....	6 05	70
Coal-porters and coke-fillers.....	4 84		Coal-porters and coke-fillers.....	4 84	60
Carpenters and joiners.....	7 02		Carpenters and joiners.....	8 47	64
Bricklayers and retort-setters.....	7 86		Bricklayers and retort-setters.....	9 32	54½
Smiths.....	7 02		Smiths.....	7 74	54
Laborers.....	4 84		Laborers.....	4 84	60

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

An establishment in Connecticut.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Mechanic.....	Day.....	.....	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75
Laborer.....	do.....	\$1 75	1 75	1 85	1 85	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75

REMARKS.—But two classes of labor are given in this schedule—mechanics and laborers. The former probably includes all the skilled labor, such as stokers, blacksmiths, etc., and the latter common labor.

All classes are employed 12 hours a day.
The following statement, appended to the schedule returned by this establishment, shows the selling price of gas per 1,000 cubic feet for the years named:

Year.	Price of gas per 1,000 cubic feet.	Year.	Price of gas per 1,000 cubic feet.
1865.....	\$4 33	1877.....	
1870.....	4 33	1880.....	\$2 78
1875.....	4 00		

STATISTICS OF WAGES—GAS AND GAS COKE.

Fort Wayne Gas Light Company, Fort Wayne, Indiana.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Stoker.....	Day.....	\$2 10	\$2 10	\$2 10	\$2 10	\$2 10	\$2 10	\$2 10	\$2 10	\$2 10
Helper.....	do.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Laborer.....	do.....	1 25-	1 25-	1 25-	1 25-	1 25-	1 25-	1 25-	1 25-	1 25-
		1 30	1 30	1 30	1 30	1 30	1 30	1 30	1 30	1 30
Mechanic.....	do.....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50

REMARKS.—It is stated in the schedule that these works were established in 1855. The rates of wages, as appears from the above table, are given only since 1872, during which time there has been no fluctuation.

Since 1855, stokers and helpers have worked 12 hours a day; all other labor 10 hours.

The table below shows labor cost and selling price. The percentage of wages to cost is estimated to be about 20 per cent.

Year.	SELLING PRICE.			COST OF LABOR.
	Gas, per 1,000 cubic feet.	Coke, per bushel.	Tar, per barrel.	Gas, per 1,000 cubic feet.
1870.....	\$4 50	\$0 12	\$5 00	\$1 81
1875.....	3 50	10	3 00	1 75
1880.....	2 75	10	2 50	1 75

Indianapolis Gas Light & Coke Company, Indianapolis, Indiana.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Stoker.....	Day.....	\$1 80	\$1 80	\$1 80	\$1 80	\$2 00	\$2 25	\$2 25	\$2 25	\$2 25	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Laborer.....	do.....	1 25	1 25	1 00	1 00	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Bricklayer (a).....	do.....	2 00	2 00	2 00	2 00	3 25	3 25	3 25	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
Blacksmith.....	do.....	2 00	2 00	2 00	2 00	2 50	2 50	2 50	2 50	2 50	3 00	3 00	3 00	3 00	3 00	3 00
Tinner.....	do.....	2 00	2 00	2 00	2 00	2 50	2 50	2 50	2 50	2 50						
Carpenter.....	do.....	1 75	1 75	1 50	1 50	1 75	2 50	2 50	2 50	2 50						

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Stoker.....	Day.....	\$2 00	\$1 50	\$1 50	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	.....
Laborer.....	do.....	1 75	1 50	1 50	1 00	1 00	1 00	1 00	75	75	75	75	75	75	75	.....
Bricklayer.....	do.....	5 00														.....
Blacksmith.....	do.....															.....
Tinner.....	do.....															.....
Carpenter.....	do.....															.....

a From 1865 to 1873, inclusive, the "Bricklayer" was also a "Retort-setter".

REMARKS.—These works were established in 1852. Rates of wages are given for stokers and laborers from this date.

Stokers have always been paid monthly; common laborers weekly. A similar rule obtains in a number of industries, the employes receiving the highest wages being paid less frequently than those receiving lower wages.

From the beginning of manufacturing in 1852, stokers and helpers have worked 12 hours a day; all others 10 hours.

The following prices of gas per 1,000 cubic feet, and of gas coke per bushel, are given in this return:

Year.	Gas, per 1,000 cubic feet.	Gas coke, per bushel.
1855.....	\$3 75	.....
1860.....	3 75	.....
1865.....	4 00
1870.....	3 50	\$0 06
1875.....	3 00	8
1880.....	2 00	8

STATISTICS OF WAGES—GAS AND GAS COKE.

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Portland Gas Light Company, Portland, Maine.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Stoker	Day ..	\$1 75	\$1 75	\$2 00	\$2 00	\$2 00	Laborer	Day	\$1 50	\$1 50	\$1 75	\$1 75	\$1 75

REMARKS.—The only statement of importance in this return other than those noted in the general remarks is that the hours of labor are 12 for all classes. It is also stated that the price of gas per 1,000 cubic feet in 1870 was \$3 42; in 1875, \$2 75, and in 1880, \$2 50.

East Boston Gas Company, East Boston, Massachusetts.

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Foreman	Week...	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00
Laborer	do ..	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00

Classes of employes.	Unit of payment.	DATES.													
		1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.
Foreman	Week...	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00	\$16 00
Laborer	do ..	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00	14 00

REMARKS.—All classes of laborers in this establishment work 12 hours a day, 7 days in the week.

These works were established in 1853. Rates of wages of only two classes of labor, foremen and laborers, are given, and it is stated in

the schedule that there has been no change in these rates from the first.

The following prices of gas and gas coke are given in the schedule furnished by the above-named company:

Year.	Gas, per 1,000 cubic feet.	Coke, per chaldron.
1860.....	\$4 20	\$5 00
1865.....	4 20	5 00
1870.....	4 00	5 00
1875.....	3 00	4 00
1880.....	2 50	3 00

Paterson Gas Light Company, Paterson, New Jersey.

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Foreman	Day	\$2 50	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 00	\$3 00	\$3 00
Head of gang.....	do ..	2 25	2 50	2 50	2 50	2 50	2 50	3 00	3 00	2 50	2 50	2 25	2 25	2 25	2 00
Fireman	do ..	2 00	2 00	2 00	2 00	2 00	2 00	2 10	2 10	2 00	2 00	2 00	2 00	2 00	1 75
Laborer	do ..	1 50	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 50	1 75	1 50

REMARKS.—These works were established in 1847, but rates of wages are given only since 1867, the records prior to that time being destroyed.

The firemen or stokers are employed 12 hours a day; all others 10. The price of gas per 1,000 cubic feet in 1870 and 1875 was \$3 80; in 1880, \$2.

GLASS.

Under this head are included rates of wages paid in those establishments only that make glass from the sand. Rates of wages paid in staining, cutting, engraving, drawing, or spinning glass, or any other process of reworking, are not included, except in cases of establishments that cut and engrave in connection with the manufacture of glass from the sand. In a word, the rates cover the manufacture, not the reworking, of glass.

This manufacture is classified under four heads, viz: (1) flint glass; (2) green glass; (3) plate glass; (4) window glass.

The methods of work and payment in this industry present quite a number of interesting features. The furnaces having once been lighted up, the work is continuous, melting and "working-out" the molten glass following each other in uninterrupted succession until the furnace fire is put out. In flint-glass works the glass is melting in one set of pots in a furnace while in others it is being blown or pressed. In a window-glass house no blowing is done until the glass is melted. The melting and "blowing-out" of all the pots in a furnace requires more than 24 hours. As a result, window glass works blowing is commenced at different hours each day, at shortly after midnight Sunday night and later each day.

As will be apparent from the statements accompanying the wages tables, the amount of product is restricted by the several trades-unions in most branches of glass-making. A blower is allowed to make but 48 boxes of window glass, while the number of pieces of certain articles that constitute a day's work in flint-glass and green-glass houses is usually rigidly fixed.

The method of payment in window-glass houses is interesting. Owing to the peculiar character of the business, it is almost impossible to ascertain at the end of each week or each two weeks what amount of money is due to the blower or flattener, they being paid in accordance with the quality of the glass produced, and this can be ascertained only when the glass has been flattened and cut, or at least inspected. This sometimes requires many weeks, especially in dull seasons. It is therefore customary to advance to men what is termed "market money", equaling a certain amount a week, and to have final settlements at the end of the "fire". In the window-glass report, therefore, it will be understood that most of the skilled workmen, such as the blowers, gatherers, cutters, and flatteners, are paid weekly or every two weeks on account, and full settlements are had at the end of the fire, generally in June.

FLINT GLASS.

Under this division are included works making flint (lime or lead) glassware, both blown and pressed, lamp chimneys, and flint druggists' and chemists' ware.

The returns regarding this branch of the glass industry are more complete and satisfactory than those from the other three divisions. Nevertheless it has been thought best to supplement them with statements of wages in 1880 taken from the returns made to me as special agent in charge of the statistics of glass. The number of employes of each class does not in all cases include all of the employes of each class engaged in the industry in the state, but only the number concerning whose wages statements were received.

Average daily earnings and number of employes at certain of the flint-glass works of the United States during the census year, 1880.

[Continued on next page.]

Classes of employes.	KENTUCKY.		MASSACHUSETTS.				NEW JERSEY.		NEW YORK.						OHIO.						
	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	
Managers.....	3	.....	1	\$5 00	1	.....	.....	.....	1	\$5 00	1	\$5 00	1	\$5 00	1	\$4 00	2	\$4 00	1	\$3 00
Pressers.....	8	\$3 50	4	2 37½	4	10	\$1 00	2	2 50	1	2 01	1	2 83	14	3 50	7	3 07	14	4 00
Finishers.....	12	3 50	8	3 47	0	\$1 75-2 75	40	4 00	10	3 30	.....	.....	23	2 01	22	3 50	7	3 50	7	3 50
Gatherers.....	24	2 00	5	2 15	8	1 12	15	75	15	2 00	18	1 27	23	1 27	28	1 50	14	2 20	23	2 00	
Stickers-up.....	8	80	21	1 15	20	50-75	.....	.....	0	80	18	73	23	73	20	75	00	75	10	73
Cleaning-off boys.....	20	00	7	75	4	02	40	50	8	00	18	55	27	55	22	00	.....	.....	1	75
Carrying-in boys.....	40	50	9	75	17	33-42	40	50	9	50	24	55	4	55	30	50	14	50	14	55	
Mold-holders.....	20	00	3	1 04	0	02	50	50	5	70	0	73	4	73	10	2 75	.....	.....	7	55
Blowers.....	20	3 50	14	2 20	22	1 00-2 00	200	4 00	12	2 50	18	2 00	3	2 20	10	2 75	.....	.....	7	3 07
Cutters.....	1	2 50	35	2 50	34	2 00-4 00	10	2 00	.....	.....	.....	.....	2	2 50	.....	.....	.....	.....	2	1 50
Engravers.....	2	3 00	4	2 50	2	3 00	5	2 50	.....	.....	.....	.....	.....	.....	.....	.....	1	3 50	4	1 75
Mold-makers.....	5	4 00	5	2 50	.....	.....	20	2 50	2	3 50	.....	.....	.....	.....	.....	.....	6	3 00	3	3 00
Machinists.....	1	3 00	.....	.....	2	1 50	.....	.....	2	2 50	1	1 50	.....	.....	.....	.....	.....	.....	3	3 00
Mixers.....	0	1 50	2	2 00	8	1 87	5	1 50	3	1 25	2	1 50	2	1 50	2	2 00	4	1 50	2	1 50	
Teasers.....	4	2 00	2	2 00	4	1 87-2 00	15	75	2	1 50	2	2 00	2	2 15	2	3 00	4	1 00	0	1 70	
Pot-fillers.....	2	1 50	.....	.....	1	1 00	.....	.....	1	1 30	2	1 50	.....	.....	.....	.....	4	1 50	2	1 00
Pot-makers.....	1	10 00	1	2 25	1	2 00	4	2 00	1	2 00	2	2 00	1	2 50	3	2 50	1	2 50	1	2 00	
Clay-trampers.....	3	1 50	2	1 50	2	1 00	12	1 25	3	1 00	1	1 50	1	1 50	1	1 50	3	1 50	1	1 25	
Packers.....	15	1 75	4	1 75	5	1 50	30	1 50	5	1 17	6	1 83	7	1 07	5	1 75	9	1 50	4	1 50	
Drivers.....	5	2 00	.....	.....	2	1 00	10	1 25	.....	.....	1	2 00	1	2 50	2	2 00	1	1 00	2	1 40
Laborers.....	6	1 25	19	1 50	16	1 00	210-225	1 25-00	10	1 00	10	1 25-1 50	13	07-1 50	7	1 50	5	1 50	8	1 25	
Engineers.....	1	3 00	1	2 50	1	2 25	8	2 00	1	2 00	1	2 50	1	1 07	1	3 00	2	2 00	2	1 50	

a Men.

b Boys.

STATISTICS OF WAGES—FLINT GLASS.

Average daily earnings and number of employes at certain of the flint-glass works of the United States during the census year, 1880—Continued.

Classes of employes.	PENNSYLVANIA.																		WEST VIRGINIA.	
	PITTSBURGH DISTRICT.												EASTERN DISTRICT.							
	GLASSWARE.						BOTTLES.				CHIMNEYS.		GLASSWARE.		CHIMNEYS.		BOTTLES.			
	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.		
Managers	1	\$3 50	1	\$3 85	1	\$3 00	.....	1	\$4 00	1	\$6 00	.....	.....	3	\$4 00	2	\$5 00	2	\$4 00	
Pressers	4	3 50	11	3 50	15	2 95	16	\$3 50	.....	.....	.....	16	\$2 72- 4 50	1	2 00	2	2 60	20	4 00	
Finishers	2	2 00	13	2 60	0	3 45	9	3 00	.....	.....	40	76	38	2 54- 5 45	17	4 00	25	2 50	20	4 00
Gatherers	25	1 75	10	2 14	10	1 75	20	2 00	.....	.....	30	2 04	45	1 14- 2 72	2	67	1	3 84- 1 00	26	2 20
Stickers-up	15	1 00	24	1 00	15	1 00	20	90	18	50	2	1 10	47	64- 90	16	54	25	66- 1 00	52	90
Cleaning-off boys	16	80	.....	.....	6	1 00	6	1 20	18	75	2	1 00	30	54	19	58	10	50	6	75
Carrying-in boys	4	80	24	62	17	70	34	70	18	75	2	76	20	54	10	48	10	50	25	62
Mold-holders	1	1 50	.....	.....	2	1 00	3	90	36	50	.....	.....	.....	.....	18	48	5	50	16	80
Blowers	17	3 50	.....	.....	2	3 45	6	3 50	57	3 30	41	3 37	27	1 82- 4 00	38	4 00	25	1 00	6	3 00
Cutters	1	3 50	a 8 52	1 07 50	1	2 25	2	2 50	.....	.....	.....	.....	9	2 50	a 8 53	3 50 1 25	6	1 50- 2 00	28	1 75
Engravers .....	.....	.....	5	2 00	.....	.....	1	3 00	.....	.....	.....	.....	1	3 00	.....	.....	1	1 00- 3 33	a 2 55	1 75 83
Mold-makers .....	.....	.....	7	2 60	5	3 40	10	3 00	.....	.....	.....	.....	8	2 00- 6 00	2	3 00	1	2 50- 4 16	8	3 00
Machinists	1	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2 25	1	2 50- 4 16	1	3 00
Mixers	1	2 00	3	2 33	3	1 83	3	1 50	3	1 50	2	1 83	5	1 50	2	2 25	2	1 50- 2 00	4	1 50
Teasers	2	2 50	2	2 43	4	2 57	5	2 30	4	2 00	2	2 14	6	1 75	0	2 00	2	2 00- 2 33	6	2 00
Pot-fallers	1	2 00	.....	.....	2	1 83	4	2 00	.....	.....	1	1 50	.....	.....	.....	.....	2	1 33	2	1 50
Pot-makers .....	.....	.....	2	2 50	.....	.....	.....	.....	.....	.....	.....	.....	2	2 75	1	3 00	2	2 50	2	2 25
Clay-trampers .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	1 50	1	1 50	1	1 66	6	1 50
Packers	4	2 00	a 5 b 5 c 5	2 00 50 50	11	2 00	10	.....	9	1 38	6	1 96	12	1 66- 2 50	a 2 58	1 50 1 00	4	1 66	14	1 00
Drivers .....	.....	.....	2	2 00	2	2 00	3	2 00	3	1 65	.....	.....	3	2 00	2	1 85	2	1 66	6	1 62
Laborers	1	1 50	1	1 50	2	1 50	5	1 50	3	1 50	3	1 33	.....	.....	27	1 50	10	1 33- 1 00	a 14 b 1 c 40	1 25 83 50
Engineers	1	2 00	1	2 25	1	2 67	2	3 00	1	1 50	1	2 00	2	2 50	1	1 85	1	2 50	2	2 00
<div>a Men.</div> <div>b Boys.</div> <div>c Women or girls.</div>																				

a Men.

b Boys.

c Women or girls.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

W. L. Libbey & Son, Cambridge, Massachusetts.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Manager.....	Month	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00
Presser.....	Day	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	2 00	2 00	2 00	2 00
Finisher.....	do	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	2 00	2 00	2 00	3 00
Gatherer.....	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 00	2 00	2 00	2 00
Sticker-up.....	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Cleaning-off boy.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Carrying-in boy.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	7 00
Mold-holder.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Blower.....	do	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	3 00	3 00	3 00	3 00
Cutter.....	do	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75
Engraver.....	do	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75
Mold-maker.....	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	2 75	2 75	2 75	2 75
Machinist.....	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 75	2 75	2 75	2 75
Mixer.....	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00
Tenser.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Pot-filler.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Pot-maker.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Clay-tramper.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 50	1 50	1 50	1 50
Packer.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75
Driver.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75
Laborer.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75
Engineer.....	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50

Classes of employes.	Unit of pay-ment.	DATES.															
		1805.	1804.	1803.	1802.	1801.	1800.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Manager	Month	\$150 00	\$150 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00	\$125 00
Pressor	Day...	2 00	2 00	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Finisher	do ..	3 00	3 00	2 50	2 50	2 50	2 52	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Gatherer	do ..	2 00	2 00	1 00	1 00	1 00	1 00	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Sticker-up	do ..	1 25	1 25	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Cleaning-off boy	do ..	1 00	1 00	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Carrying-in boy	do ..	1 00	1 00	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Mold-holder	do ..	1 00	1 00	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Blower	do ..	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Cutter	do ..	2 75	2 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Engraver	do ..	2 75	2 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Mold-maker	do ..	2 75	2 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Machinist	do ..	2 75	2 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Mixer	do ..	2 00	2 00	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Teaser	do ..	2 00	2 00	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Pot-filler	do ..	2 00	2 00	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Pot-maker	do ..	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Clay-tramper	do ..	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer	do ..	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Driver	do ..	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Laborer	do ..	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Engineer	do ..	2 50	2 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00

REMARKS.—These works were established in 1818. The product is high-grade glassware, chiefly rich cut and colored goods and decorated ware.

In the glass-blowing and pressing departments the men work by the move, 8 moves constituting a week's work. The rates of wages given in the table are based on this number of moves. When more are made, which is but rarely, they are paid for extra. The rates given, however, would not be increased materially by this extra work.

There are no allowances or privileges.

Very little is paid out by the workmen for tools, and nothing for helpers.

The tabulations give rates of wages from 1850 only. Statements regarding intervals of payment date as early as 1830. From 1830

to 1875 wages were paid every two weeks. Since this latter date, weekly.

All payments are in cash.

From 1830 to 1845 the hours of labor of all classes were 12 per day; since 1845, 10 hours. The schedule states that more goods are produced now in 10 hours than formerly in 12 hours. The habits of the men are better, the result, in part, of the shorter hours. Quite a number of the workmen have been employed continuously from 25 to 40 years.

The works have been operated 12 months each year since 1830.

There has been some increase in the efficiency of labor; how great or from what cause is not stated.

Many improvements have been made in pressing glass; little, if any, in blowing.

STATISTICS OF WAGES—FLINT GLASS.

An establishment in the state of New York.

Classes of employes.	Unit of payment.	DATES.															
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1860.	1865.
Manager	Month ..	\$112 50				\$90 00						\$100 00				\$125 00	
Presser	Day	3 00				2 50						2 80				3 00	
Finisher	do	3 70				3 00						3 60				4 00	
Gatherer	do	2 80				2 50						2 80				3 00	
Sticker-up	do	80				70						80				1 00	
Cleaning-off boy	do	70				70						80				1 00	
Carrying-in boy	do	50				50						60				90	
Mold-holder	do	70				70						80				95	
Blower	do	2 50				2 20						2 50				2 75	
Cutter	do	2 75				2 25						2 50				2 75	
Engraver	do	4 00				3 25						3 75				4 00	
Mold-maker	do	3 50				3 00						3 25				3 50	
Machinist	do	3 00				2 50						2 75				3 00	
Mixer	do	2 00				1 50						1 75				2 00	
Teaser	do	1 85				1 50						2 00				2 25	
Pot-filler	do	1 50				1 25						1 50				1 75	
Pot-maker	do	2 30				2 00						2 75				3 00	
Clay-tramper	do	1 37½				1 00						1 50				1 65	
Packer	do	1 50				1 00						1 60				1 75	
Driver	do	2 00				1 50						2 00				2 25	
Laborer	do	1 25				1 00						1 35				1 50	
Engineer	do	1 75				1 35						1 75				2 00	
Watchman	do	1 50				1 30						1 65				1 75	

Classes of employes.	Unit of payment.	DATES.														
		1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Manager	Month ..			\$112 50	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00
Presser	Day			2 50	2 25	2 25	2 25	2 25	2 55	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Finisher	do			3 00	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75
Gatherer	do			2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Sticker-up	do			80	70	70	70	70	70	70	70	70	70	70	70	70
Cleaning-off boy	do			70	60	60	60	60	60	60	60	60	60	60	60	60
Carrying-in boy	do			60	50	50	50	50	50	50	50	50	50	50	50	50
Mold-holder	do			70	60	60	60	60	60	60	60	60	60	60	60	60
Blower	do			2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Cutter	do			1 60	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Engraver	do			2 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Mold-maker	do			2 75	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Machinist	do			2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Mixer	do			1 42	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35
Teaser	do			1 65	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Pot-filler	do			1 42	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35
Pot-maker	do			1 75	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 67
Clay-tramper	do			1 85	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Packer	do			1 40	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33
Driver	do			1 62½	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Laborer	do			1 12½	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Engineer	do			1 42	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35
Watchman	do			1 35	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARKS.—The statement appended to this schedule shows that these works make chiefly plain glass, such as shades, castor bottles, bowls, goblets, etc., for glass-cutters' use.

There have been no opportunities for extra earnings.

No allowances are given.

There are no deductions for tools, etc.

The interval of payment has been every two weeks since the works started.

Cash has always been paid.

Ten hours have always constituted a day's work, except in the case of teasers and watchmen, who work 12 hours 7 days a week.

These works have been in continuous operation since starting—

that is, there have been no extended stoppages. In times of dull trade, however, they are run but half time.

The only statement under these heads is that wages are one-third the cost of the product, including in cost materials, repairs, interest, labor, waste, etc.

The statement is made that reduced wages have compelled greater activity, and as a consequence an increased efficiency of labor.

The raw material used in this industry has been greatly improved, and improved presses, molds, and furnaces have been introduced, which have facilitated the process of manufacture somewhat. No statement is made as to the effect of these improvements upon wages, cost, employment, etc.

STATISTICS OF WAGES—FLINT GLASS.

83

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1880.	1879.	1878.	1877.			1880.	1879.	1878.	1877.
Manager.....	Month..	\$100 00	\$100 00	\$100 00	\$100 00	Teaser.....	Day....	\$2 00	\$2 00	\$2 00	\$2 00
Presser.....	Day....	3 50	3 50	3 50	3 50	Pot-filler.....	do....	1 50	1 50	1 50	1 50
Finisher.....	do....	3 30	3 30	3 30	3 30	Pot-maker.....	do....	3 00	3 00	3 00	3 00
Gatherer.....	do....	2 20	2 20	2 00	2 00	Clay-tramper.....	do....	1 50	1 50	1 50	1 50
Sticker-up.....	do....	80	80	80	80	Packer.....	do....	1 50	1 50	1 50	1 50
Carrying in boy.....	do....	60	50	50	50	Driver.....	do....	1 75	1 75	1 75	1 75
Engraver.....	do....	3 00	3 00	3 00	3 00	Laborer.....	do....	1 50	1 50	1 50	1 50
Mold-maker.....	do....	3 00	3 00	3 00	3 00	Engineer.....	do....	2 00	2 00	2 00	2 00
Mixer.....	do....	1 50	1 50	1 50	1 50						

REMARKS.—These works were established in 1876, and make goblets and stem glassware.

No opportunities for extra earnings are reported, nor are there any allowances, privileges, or deductions.

Payments are made weekly in cash.

The regular hours of labor are 10 a day.

The works have been operated 10½ months a year, the stoppages being occasioned by necessity for repairs.

These works have been established so short a time that there has been but little opportunity for increased efficiency.

The same statement may be made concerning labor-saving machinery and improvements. The works, when built, had the most modern appliances.

The following statement gives the selling prices of goblets and labor cost per dozen, and percentage of wages to cost, at an Ohio factory:

Year.	Selling prices per dozen.	Labor cost per dozen.	Percentage of wages to cost for the entire production.
1877.....	\$0 65	\$0 15	Per cent. 33
1878.....	00	15	33
1879.....	55	15	38
1880.....	48	15	33

Gillinder & Sons, Philadelphia, Pennsylvania.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Presser.....	Day....	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 50	\$4 50
Finisher.....	do....	3 03	3 03	3 03	3 03	3 03	3 03	3 03	4 00	4 00
Gatherer.....	do....	2 72	2 72	2 72	2 72	2 72	2 72	2 72	2 01	2 01
Sticker-up.....	do....	1 00	1 00	1 00	1 00	00	00	00	00	00
Cleaning-off boy.....	do....	54½	54½	54½	54½	54½	54½	54½	54½	54½
Carrying-in boy.....	do....	54½	54½	54½	54½	54½	54½	54½	54½	54½
Mold-holder.....	do....	54½	54½	54½	54½	54½	54½	54½	54½	54½
Blower (chimney).....	do....	2 00	2 00	2 00	1 82	1 82	1 82	1 82	2 18	2 00
Cutter.....	do....	2 06	2 06	2 06	2 06	2 06	2 53	2 50	2 50	2 75
Engraver.....	do....	3 33½	3 33	3 33½	2 50	2 50	3 75	3 00	3 00	3 00
Mold-maker.....	do....	3 50	3 50	3 50	2 75	2 75	2 75	2 75	3 00	3 00
Machinist.....	do....	2 50	2 50	2 50	2 75	2 75	2 75	2 75	3 00	3 00
Mixer.....	do....	1 50	1 50	1 50	1 50	1 00	1 50	1 50	1 75	1 07
Teaser.....	do....	1 85	1 85	1 85	1 70	1 70	1 85	2 00	2 00	2 00
Pot-filler.....	do....	1 50	1 00	1 50	1 00	1 50	1 50	1 50	1 75	1 07
Pot-maker.....	do....	2 75	2 75	2 75	2 00	2 50	2 50	2 50	2 50	3 33
Clay-tramper.....	do....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer.....	do....	1 84	1 84	1 84	2 00	2 00	2 00	1 84	1 84	2 25
Driver.....	do....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 84	1 84
Laborer.....	do....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 75	1 50
Engineer.....	do....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 75	2 75
Chimney-maker.....	do....	2 91	2 91	2 91	2 72	2 72	2 72	2 72	3 00	2 91
Caster-hole gaffer.....	do....	5 45	5 45	5 45	5 45	5 45	6 30	6 30	7 00	6 00
Caster-hole servitor.....	do....	4 09	4 09	4 09	4 09	4 09	4 54	4 54	5 00	4 50

STATISTICS OF WAGES—FLINT GLASS.

Gillinder & Sons, Philadelphia, Pennsylvania—Continued.

Classes of employes.	Unit of payment.	DATES.								
		1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Presser	Day	\$4 50	\$4 00	\$5 00	\$5 00	\$5 00	\$5 00			
Finisher	do	4 00	4 00	4 54	4 54	4 54	4 54			
Gatherer	do	2 91	2 91	3 03	3 03	3 03	3 03			
Sticker-up	do	90	90	1 09	1 09	1 09	1 09			
Cleaning-off boy	do	54½	54½	54½	54½	54½	54½			
Carrying-in boy	do	54½	54½	54½	54½	54½	54½			
Mold-holder	do	54½	54½	54½	54½	54½	54½			
Blower (chimney)	do	1 82	2 00	2 36	2 00	2 00	2 00	\$2 00	\$1 82	\$1 50
Cutter	do	3 00	2 00	3 00	3 00	3 00	3 00			
Engraver	do		2 50	4 00	4 00	4 00	3 75			
Mold-maker	do	3 00	3 00	4 00	4 00	4 00	4 00			
Machinist	do	3 00	3 00	4 00	4 00	4 00	4 00			
Mixer	do	1 50	1 50	2 00	2 00	1 85	1 85	1 67	1 50	1 60
Tearer	do	2 00	2 55	2 00	2 00	1 85	1 85	1 07	1 50	1 00
Pot-filler	do	1 85	1 85	2 00	2 00	1 85	1 85	1 07	1 50	1 00
Pot-maker	do	3 33	3 00	3 00	2 67	2 07	2 07	2 50	2 00	2 00
Clay-tramper	do	1 50	1 80	1 67	1 67	1 67	1 67	1 07	1 50	1 00
Packer	do	2 25	2 25	2 25	2 25	2 25	2 50	2 00	1 50	1 00
Driver	do	1 84	1 84	2 00	2 00	1 85	1 85	1 85	1 50	1 50
Laborer	do	1 50	1 50	1 67	1 67	1 67	1 67	1 67	1 50	1 00
Engineer	do	2 75	2 75	2 50	2 50	2 50	2 50	2 00	1 50	1 50
Chimney-maker	do	2 91	2 91	3 45	3 27	3 27	3 27	2 91	2 54	2 18
Caster-hole gaffer	do	6 00	6 00	7 27	7 27	7 27	5 00			
Caster-hole serviter	do	4 50	4 50	5 00	5 00	5 00	3 73			

REMARKS.—These works are situated in eastern Pennsylvania; were established in 1861, and make table glassware, including goblets and tumblers, glass globes and shades, lamps and chimneys, retorts, and other chemical glassware. The table giving rates of wages has been prepared with great care and is quite complete.

Many of the glass-makers work by the piece, a certain number of pieces, varying with the article, constituting a day's work. They frequently make more than this number, and are paid extra for the extra number.

No allowances or deductions are mentioned.

The interval of payment has always been weekly.

Payments have always been in cash.

The works have averaged 10 months a year since they were

started. They are idle a month about January for stock-taking and dull trade, and in July for repairs.

Owing to the great variety of goods manufactured, no statement was made of the relation of wages and labor to selling price and cost.

There has been no increase in the efficiency of labor from any cause.

Improved presses and molds have been introduced, resulting in an increased output in a given time. No statement is made as to the effect on labor.

Regarding the effect of this employment upon the health of the workman, it is stated that "when a man reaches 55 years of age he seems to lose his skill as a workman and has to take a subordinate place".

O'Hara Glass Company (limited), Pittsburgh, Pennsylvania.

[Continued on next page.]

[illegible]

O'Hara Glass Company (limited), Pittsburgh, Pennsylvania—Continued.

Classes of employes.	Unit of payment.	DATES.										
		1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.
Pressor	Day	\$4 50	\$4 50	\$4 50	\$5 00	\$3 30	\$3 30	\$3 30	\$2 62	\$2 62	\$2 62	.....
Finisher	do	4 74	4 74	4 74	5 06	3 37	3 37	3 37	2 58	2 58	2 58	.....
Gatherer	do	1 77	1 77	1 77	1 07	1 52	1 52	1 52	1 12	1 12	1 12	.....
Sticker-up	do	1 50	1 50	1 50	1 00	90	90	90	00	90	90	.....
Carrying-in boy	do	70	70	70	80	60	60	60	60	60	60	.....
Cutter, foreman	Week	30 00	30 00	30 00	30 00	21 00	21 00	21 00	21 00	21 00	21 00	.....
Cutter, journeyman	do	12 50	12 50	12 50	12 50	7 75	7 75	7 75	7 37	7 37	7 37	.....
Mold-maker, foreman	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mold-maker, assistant	do	22 70	22 70	22 70	22 70	13 33	13 33	13 33	11 70	11 70	11 70	.....
Mixer	do	13 50	13 50	13 50	14 00	8 00	8 00	8 00	6 50	6 50	6 50	.....
Tenser	do	17 00	17 00	17 00	17 00	7 50	7 50	7 50	6 50	6 50	6 50	.....
Pot-maker	do	20 00	20 00	20 00	19 00	17 00	17 00	17 00	13 00	13 00	13 00	.....
Clay-tramper	do	11 00	11 00	11 00	11 00	7 00	7 00	7 00	6 50	6 50	6 50	.....
Packer	do	13 00	13 00	13 00	14 50	7 50	7 50	7 50	6 25	6 25	6 25	.....
Driver	do	13 00	13 00	13 00	13 00	7 00	7 00	7 00	7 00	7 00	7 00	.....
Laborer	do	10 00	10 00	10 00	10 00	6 00	6 00	6 00	5 00	5 00	5 00	.....

REMARKS.—These works were established in 1829, but rates of wages are given from 1860 only. All varieties of pressed tableware, such as bowls, goblets, tumblers, etc., are made. The tabulation given above shows the daily or weekly rates of wages. The

return includes a very interesting statement of the wages made per move, not only for the several classes of labor working by the move—the pressers, finishers, and gatherers—but of three grades of workmen under each class. These are as follows per move:

Classes of employes.	1860.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.
Finishers—																					
1st class	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$1 75	\$1 75	\$1 75	\$1 50	\$1 50	\$1 50
2d class	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 50	1 70	1 70	1 70	1 25	1 25	1 25
3d class	1 80	1 80	1 80	1 80	1 80	1 80	1 80	1 80	1 75	2 12	2 12	2 12	2 12	2 12	2 35	1 60	1 60	1 60	1 12	1 12	1 12
Pressers—																					
1st class	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 12	2 12	2 12	2 50	2 50	2 75	1 70	1 70	1 70	1 50	1 50	1 50
2d class	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 50	1 60	1 60	1 60	1 12	1 12	1 12
3d class	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 10	2 10	2 10	2 10	2 10	2 35	.....	.....	.....	.....	.....	.....
Gatherers—																					
1st class	1 05	1 05	1 05	1 05	1 05	1 05	1 05	1 05	1 05	1 00	1 00	1 00	1 00	1 00	2 10	1 25	1 25	1 25	1 00	1 00	1 00
2d class	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 50	1 75	1 75	1 75	1 75	1 75	1 05	1 00	1 00	1 00	75	75	75
3d class	1 20	1 20	1 20	1 20	1 20	1 20	1 20	1 20	1 25	1 65	1 65	1 65	1 65	1 65	1 85	80	80	80	62	62	62

Glass-house men are paid by the piece, and could have the opportunity of making extra earnings, but, owing to the limitations put by the union upon the number of pieces to be made, they do not avail themselves of this opportunity. From 20 to 25 per cent. more wages could be made were it not for this limitation.

No allowances or privileges are given.

The works supply all tools and pay all under-hands.

Payments have been made weekly since 1850 and always in cash.

The regular hours of labor since 1850 are stated in the schedule to have been as follows:

Year.	Glass-work-ers.	Tensers.	Mixers.	All others.
1850	10	12	12	10
1855	10	12	12	10
1860	10	12	12	10
1865	9	12	12	10
1870	9	12	12	10
1875	9	12	12	10
1880	9	12	12	10

The only change in the hours of labor has been with the glass-house workers. When they were put on piece-work they made

their task in less time. In 1855 this establishment ceased turn work, and has since worked only through the day. This was found to be of great advantage in the character of the work, the health of the employes, and the securing of a better class of boys, the parents always preferring to have their boys home at night.

No statement is made in regard to regularity of employment.

The prices of goblets per dozen from 1855 are given as follows:

Year.	Price per dozen.	Year.	Price per dozen.
1855	\$2 50	1875	\$0 00
1860	1 50	1880	50
1865	8 50	1883	35
1870	1 25		

It is stated that labor is about 50 per cent. of cost.

There has been no change in the efficiency of labor except in pressing, an art in its infancy in 1849.

Presses and molds have steadily improved. The introduction of blowers and many small tools in the working of the glass has enabled the workmen to do better work, and, if they would, to do more work. All these improvements have resulted only in making the work of the men easier and not in increasing the output.

STATISTICS OF WAGES—FLINT GLASS.

An establishment in Pennsylvania.

Classes of employés.	Unit of payment.	DATES.										
		1860.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Finisher	Day	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Gatherer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Sticker-up	do	07	07	07	07	07	07	07	07	07	07	07
Cleaning-off boy	do	50	50	50	50	50	50	50	50	50	50	50
Carrying-in boy	do	50	50	50	50	50	50	50	50	50	50	50
Mold-holder	do	50	50	50	50	50	50	50	50	50	50	50
Blower	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Cutter	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Engraver	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Mixer	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Teaser	do	2 30	2 30	2 30	2 30	2 30	2 25	2 25	2 25	2 25	2 25	2 25
Pot-filler	do											
Pot-maker	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Clay-tramper	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Driver	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Laborer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Engineer	do	2 07	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50

REMARKS.—These works were established in 1865, but rates of wages are given from 1870 only. All classes of lamp goods, including chimneys and globes, are made.

Such workmen as gatherers, blowers, and finishers, who work by the piece, make on an average about one-eighth over-time. They are paid for this at regular rates, which would increase the rates given in the table 12½ per cent.

No allowances are given.

The cost per year to certain workmen for tools is about \$5.

Employés have been paid each week and always in cash.

Blowers, gatherers, and factory boys have worked 9 hours a day during the years covered by this statement; packers and outside hands 10 hours.

Regarding hours of labor, the member of the firm making the return says: "Our experience indicates that glass-workers ought not

to work more than 9 hours per day. We have endeavored to reduce the hours to 8, and on an average these men have not worked more than this. We have always avoided working the hands at night, except teasers and such hands as it takes to keep the fires going and make the meltings of glass ready for the day-hands. If 8 hours could be established as the time for a day's work, and men would not abuse the extra time thus afforded, but use it for rest, it would benefit mankind."

From 1865 to 1870 the works were in operation on an average 10 months each year; from 1870 to 1875, 11 months; and 11 months and 2 weeks from 1875 to 1880.

The following statement gives the selling prices of glass chimneys per dozen at an establishment in eastern Pennsylvania from 1870 to 1880:

Year.	LIME GLASS.			LEAD GLASS.		
	No. 0, Sun.	No. 1.	No. 2.	No. 0.	No. 1, Sun.	No. 2.
1870.....	\$0 45 to \$0 50	\$0 50 to \$0 55	\$0 55 to \$0 60	\$0 60 to \$0 65	\$0 65 to \$0 70	\$0 75 to \$0 80
1875.....	38 to 40	40 to 42	50 to 52	50	53	70
1880.....	30 to 32	32 to 34	44	40	44	50

It is stated that there has been no increase in the efficiency of labor. No statement as to labor-saving machinery and improvements.

An establishment in Pennsylvania.

[Continued on next page.]

Classes of employés.	Unit of payment.	DATES.																
		1881.	1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
Manager	Month	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00	\$78 00					
Finisher	Day	4 30	3 53	2 69	2 51	2 42	3 04	2 42	3 01	3 25	3 19	3 88	3 53					
Cleaning-off boy	do	42	42	42	42	42	42	42	42	42	42	42	42					
Carrying-in boy	do	46	46	46	46	46	46	46	46	46	46	46	46					
Mold-holder	do	54	54	54	54	54	54	54	54	54	54	54	54					
Blower	do	4 30	3 53	2 69	2 51	2 42	3 04	2 42	3 01	3 25	3 19	3 88	3 53	\$3 45	\$2 15	\$4 10	\$4 00	\$3 50
Mixer	do	1 71	1 71	1 71	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54	1 54					
Teaser	do	3 00	2 67	2 33	2 00	2 00	2 33	2 33	2 67	3 33	3 33	3 33	3 33					
Pot-filler	do	1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75					
Clay-tramper	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50					
Driver	do	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00					
Laborer	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50					
Engineer	do	2 50	2 33	2 33	2 33	2 33	2 17	2 00	2 00	2 00	2 00	2 00	2 00					

An establishment in Pennsylvania—Continued.

Classes of employes.	Unit of pay- ment.	DATES.																	
		1803.	1802.	1801.	1800.	1850.	1858.	1857.	1850.	1855.	1854.	1853.	1852.	1851.	1850.	1840.	1848.	1847.	1840.
Manager	Month																		
Finisher	Day																		
Cleaning-off boy	do																		
Carrying-in boy	do																		
Mold-holder	do																		
Blower	do	\$2 25	\$2 17	\$2 00		\$2 54	\$1 04		\$3 00	\$3 34		\$2 71	\$2 87	\$3 08	\$2 08	\$2 74	\$3 00	\$2 81	
Mixer	do																		
Tenser	do																		
Pot-filler	do																		
Clay-tramper	do																		
Driver	do																		
Laborer	do																		
Engineer	do																		

REMARKS.—These works are situated in eastern Pennsylvania; were established in 1830, and make bottles for proprietary articles and for druggists. The rates of wages for blowers, the chief class of employes, are given from 1847. These rates up to 1869, where rates for other classes are given in the above table, are as follows:

Year.	Earnings per day.	Year.	Earnings per day.	Year.	Earnings per day.	Year.	Earnings per day.
1847.....	\$2 81	1853.....	\$2 71	1859.....	\$2 54	1865.....	\$1 90
1848.....	3 00	1854.....	No data.	1860.....	No data.	1866.....	4 00
1849.....	2 74	1855.....	3 34	1861.....	2 00	1867.....	4 10
1850.....	2 68	1856.....	3 00	1862.....	2 17	1868.....	2 15
1851.....	2 68	1857.....	No data.	1863.....	2 25	1869.....	3 45
1852.....	2 87	1858.....	1 04	1864.....	3 50		

The return states that there are no opportunities for extra earnings. No allowances or privileges are given, nor are there any deductions.

Since 1850 payments of wages have been made weekly. Up to 1850 store-orders were used, but at this date they were discontinued "because this method of payment was considered unjust", as it is stated.

Nine hours constitute a day's work.

The statement is made that the works have been in operation an average of 9 months each year since 1830.

No statement is made in regard to the relation of wages to selling price and cost.

No statement is made in regard to the efficiency of labor.

There is no statement as to the introduction of labor-saving machinery and improvements.

An establishment in Pennsylvania.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Manager	Month	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00
Prosser	Move	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 25	2 25	2 25	2 00	2 00	2 00	1 75	1 75
Finisher	do	1 35	1 35	1 50	1 50	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 35	1 25	1 25
Gatherer	do	1 00	1 00	1 00	00	1 00	1 00	00	00	00	00	1 10	1 10	1 25	1 10	1 10
Stoker-up	do	45	45	50	50	50	50	45	45	45	40	40	40	40	37	37
Cleaning-off boy	do	45	45	50	50	50	50	45	45	45	40	40	40	40	37	37
Carrying-in boy	do	35	35	40	40	40	40	40	40	35	35	35	35	30	25	25
Mold-holder	do	45	45	50	50	50	50	45	45	45	40	40	40	37	37	37
Blower	do	1 75	1 75	2 00	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	1 75	1 75
Cutter	Day	2 50	2 50	2 50	2 50	2 50	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½	3 33½	2 50	2 50
Mold-maker	do	3 33½	3 33½	3 33½	3 33½	3 33½	4 10½	4 10½	4 10½	4 10½	4 10½	3 50	3 50	3 33½	3 33½	3 33½
Mixer	do	2 00	2 00	1 00½	1 00½	1 00½	2 00	2 00	2 00	2 00	2 00	2 00	1 83½	1 00½	1 00½	1 33½
Tenser	do	2 57	2 57	2 42	2 42	2 28	2 28	2 28	2 00	2 00	2 00	1 71½	1 71½	1 71½	1 71½	1 71½
Pot-filler	do	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	2 00	2 00	2 00	2 00	2 00	1 83½	1 00½	1 00½	1 33½
Pot-maker	do															
Clay-tramper	do															
Packer	do	1 83½	1 83½	1 83½	1 83½	1 83½	2 00	2 00	2 00	2 00	2 00	2 00	2 10½	2 33½	1 83½	1 50
Driver	do	2 00	2 00	2 00	2 00	2 00	2 10½	2 10½	2 10½	2 10½	2 10½	2 00	2 00	2 10½	2 10½	2 00
Laborer	do	1 50	1 50	1 33½	1 33½	1 50	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	2 00	1 00½
Engineer	do	2 00½	2 00½	2 50	2 50	2 00½	2 83½	2 83½	2 83½	3 00	3 00	2 83½	2 83½	3 00	2 00½	2 00½

An establishment in Pennsylvania—Continued.

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Manager.....	Month.....	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$76 00	\$72 00	\$72 00	\$72 00.
Presser.....	Move.....	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 35	1 35	1 35	1 25	1 25	1 25	1 25
Finisher.....	do.....	1 25	1 10	90	90	90	90	90	90	80	80	80	75	75	75	75
Gatherer.....	do.....	1 10	1 00	80	80	80	70	70	70	60	60	60	50	50	50	50
Sticker-up.....	do.....	25	25	25	25	25	28	40	35	35	30	30	30	30	25	25
Cleaning-off boy.....	do.....	25	25	25	25	25	28	45	40	40	35	35	30	30	25	25
Carrying-in boy.....	do.....	20	20	20	20	20	25	30	30	25	25	25	22	22	22	22
Mold-holder.....	do.....	25	25	25	25	25	25	40	35	35	35	30	25	25	25	25
Blower.....	do.....	1 75	1 50	1 50	1 50	1 50	.....	1 50	1 40	1 35	1 30	1 30	1 30	1 25	1 25	1 25
Cutter.....	Day.....	2 50	2 00	2 00	2 00	2 00	2 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Mold-maker.....	do.....	3 33½	3 00	3 00	3 00	3 00	3 00	2 50	2 50	2 50	2 00	2 00	2 00	2 00	2 00	2 00
Mixer.....	do.....	1 33½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10	1 10	1 10	1 10	1 00	1 00	1 00	1 00	1 00
Tenser.....	do.....	1 71½	1 42½	1 42½	1 42½	1 42½	1 42½	1 25	1 20	1 20	1 10	1 10	1 00	1 00	1 00	1 00
Pot-filler.....	do.....	1 33½	1 10½	1 10½	1 10½	1 10½	1 60½	1 10	1 10	1 10	1 00	1 00	1 00	1 00	1 00	1 00
Pot-maker.....	do.....	.....	.....	.....	.....	.....	.....	2 00	2 00	2 00	2 00	2 00	2 00	1 50	1 50	1 50
Clay-tramper.....	do.....	.....	.....	.....	.....	.....	.....	90	90	90	83	83	83	83	83	80
Packer.....	do.....	1 50	1 10½	1 10½	1 10	1 10	1 10½	1 15	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Driver.....	do.....	2 00	2 00	1 60½	1 33½	1 00	.....	1 00	1 00	92	92	83½	83½	83½	83½	83½
Laborer.....	do.....	1 60½	1 33½	1 33½	1 33½	1 33½	1 33½	1 25	1 25	1 10½	1 10½	83½	83½	83½	83½	83½
Engineer.....	do.....	2 50	2 00	2 00	1 60½	1 50	1 50	1 50	1 33½	1 33½	1 33½	1 00	1 00	1 00	1 00	1 00

REMARKS.—These works were established in 1850, are situated in the Pittsburgh district, and make lamp and perfumery glassware. In addition to the very full statement published above, rates of

wages for a corresponding number of years are given for three other classes—leermens, furnacemen, and mold-cleaners. These are as follows, per day:

Classes of employes.	1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1866.
Leerman.....	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 13	\$2 13	\$2 13	\$2 13	\$2 00	\$2 00
Furnaceman.....	3 00	3 00	3 00	2 00	2 00	2 75	2 75	2 75	2 75	2 50	2 50	2 50	2 50	2 25	2 25
Mold-cleaner.....	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 50	1 50	1 50	1 25	1 10	1 10	90

Classes of employes.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Leerman.....	\$2 00	\$1 75	\$1 70	\$1 70	\$1 50	\$1 10	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$0 92	\$0 92	\$0 83½	\$0 83½
Furnaceman.....	2 00	1 75	1 75	1 75	1 50	1 50	1 25	1 20	1 20	1 00	1 00	1 00	1 00	1 00	1 00
Mold-cleaner.....	90	90	90	75	75	75	60	60	60	50	50	50	50	50	50

"There have been very few opportunities for extra earnings. We prefer having sufficient force to put work through in regular working hours. Such extra earnings as have been made have not been included in the tables, and would increase the regular wages about 1 per cent."

Employes have always been paid each week. Part cash and part merchandise were paid until 1854, when the payment in merchandise was abandoned, it being unprofitable.

During the time covered by the schedule the manager has worked 16 hours a day, and the tenser 12 hours 7 days a week. Regarding the other labor, it is stated that employes outside of glass-workers make now, as always, 58 hours a week—10 hours a day every week day but Saturday, when 8 hours are made, work stopping at 4 o'clock. From 1850 to 1860, glass-workers made 9 turns or turns of 6 hours each per week; from 1860 to 1865, 10 turns of 5 hours each, or 50 hours; from 1865 to the present time, 11 turns of 5 hours each, or 55 hours.

The regularity with which the works have been run since 1851 is as follows:

Years.	Number of furnaces.	Number of months per year in operation.
1851 to 1855.....	1	11
1856 to 1860.....	2	11
1861 to 1865.....	2	7½
1866 to 1870.....	2	6½
1871 to 1875.....	3	9½
1876 to 1880.....	2	9½
Year ending June 1, 1880.....	2	11½

The cause of irregularity has been chiefly depression in trade, though at least four weeks of each year must be given to repairs of furnaces and tools.

The average selling price of a number of articles per dozen is given in the following table:

Year.	Wines and goblets.	9-inch bowls and covers.	Tumblers, 4-pint and 4-pint.	Sets.
	Per dozen.	Per dozen.	Per dozen.	Each.
1860.....	\$1 80 to \$3 25	\$24 50	\$1 50 to \$1 25	\$18 00
1865.....	1 80 to 3 25	24 50	1 50 to 1 25	18 00
1870.....	65 to 1 10	12 00	60 to 50	5 25
1875.....	37½ to 65	8 50	45 to 35	4 00
1880.....	30 to 50	7 00	30 to 25	3 50

Regarding cost of labor and percentage of wages to cost, the only statement is that in 1855 these were 38 per cent. of cost of production, and 60 per cent. in 1880.

No allowances or privileges are given, nor are there any deductions.

No change is reported in the efficiency of labor.

Various improvements have been and are being adopted looking to the saving of labor and improvement in quality of glassware; notably, about 1868 heavier molds were made to allow the presser to increase his move. With light molds it was impossible to get out a large number of pieces. In 1878 the Sturtevant fan-blower, to cool the mold and plungers and aid circulation of air in the factory, was a marked improvement. Better tools, presses, etc., enable the workmen to produce a larger quantity of work in the same time, with no increase of labor.

STATISTICS OF WAGES—FLINT GLASS.

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J. H. Hobbs, Brockunier & Co., Wheeling, West Virginia.

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Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Manager	Month..	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00			
Presser	Move..	1 75- 2 25	1 50- 2 00	1 50- 2 00	1 50- 2 00	1 50- 2 00	1 50- 2 00	1 50- 2 00	2 00- 2 50	2 00- 2 50			
Finisher	do	1 75- 2 12½	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 25	1 75- 2 25			
Gatherer	do	1 00- 1 10	1 00	1 00	1 00	1 00- 1 10	1 00- 1 10	1 00- 1 10	1 20	1 10			
Sticker-up	do	40- 50	40- 50	40- 50	40- 50	40- 50	40- 50	40- 50	40- 50	40- 50			
Cleaning-off boy	do	35	35	35	35	35	35	35	35	35			
Carrying-in boy	do	30	30	30	30	30	30	30	30	30			
Mold-holder	do	25	25	25	25	25	25	25	25	25			
Blower (caster workman)	do	1 00	1 50	1 50	1 20	1 20	1 20	1 50	1 75	1 75			
Mold-maker, foreman	Day												
Mold-maker, journeyman	do	3 10	2 70	2 80	2 90	2 00	2 00	2 50	2 75	2 75			
Mixer	do	1 33½	1 10½	1 10½	1 25	1 33½	1 33½	1 40	1 50	1 50			
Tenser	do	2 00	1 85	1 85	1 75	1 85	1 85	1 85	2 00	2 00			
Pot-filler	do	1 33½	1 10½	1 10½	1 25	1 33½	1 33½	1 40	1 50	1 50			
Pot-maker	do	2 50	2 08½	2 08½	2 39½	2 00	1 83½	2 00	2 50	2 50			
Clay-tramper	do	1 41½	1 25	1 25	1 33½	1 33½	1 33½	1 33½	1 50	1 50			
Packer	do	1 41½	1 33½	1 33½	1 41½	1 50	1 50	1 60	1 60	1 50			
Driver	do	1 50	1 33½	1 40	1 50	1 80	1 80	1 80	1 75	1 75			
Laborer	do	1 25	1 10½	1 10½	1 25	1 25	1 33½	1 33½	1 50	1 50			
Engineer and blacksmith	do	2 25	2 25	2 50	2 50	2 50	2 50	2 50	3 00	3 00			

Classes of employes.	Unit of payment.	DATES.											
		1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.
Manager	Month..			\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00	\$120 00		\$120 00	\$120 00
Presser	Move..			2 00- 2 25	2 00- 2 25	2 00	1 25- 1 37½	1 00- 1 12	1 00- 1 12½	1 00- 1 12	\$1 00- 1 12	87½- 1 00	87½- 1 00
Finisher	do			1 95- 2 50	2 00- 2 50	2 00- 2 50	1 25- 1 50	1 12- 1 37	1 12- 1 37	1 12- 1 37	1 12- 1 37	1 12- 1 37	1 12- 1 37
Gatherer	do			1 12	1 12	1 12	75	37- 50	37- 50	37- 50	37- 50	37- 50	37- 50
Sticker-up	do			30- 35	30- 35	30	25	25	25	25	25	25	25
Cleaning-off boy	do			30- 35	30- 35	30- 35	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25
Carrying-in boy	do			30- 35	30- 35	30- 35	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25
Mold-holder	do			30- 35	30- 35	30- 35	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25	18½- 25
Blower (caster workman)	do			1 50	1 50	1 50	1 50	1 12- 1 25	1 12- 1 25	1 12- 1 25	1 12- 1 25	1 12- 1 25	1 12- 1 25
Mold-maker, foreman	Day												
Mold-maker, journeyman	do			2 70	2 75	3 40	2 00- 2 50	2 00	1 75- 2 00	1 00- 2 50	1 00- 2 50	2 00- 2 50	2 00- 2 50
Mixer	do			1 41½	1 33½	1 33½	1 10½	1 00	1 10½	83½- 1 00	83½	83½	83½
Tenser	do			2 00	2 00	2 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Pot-filler	do			1 41½	1 33½	1 33½	1 00	75	83½	83½	83½	83½	83½
Pot-maker	do			2 10½	2 00	1 83½	1 25	1 50	1 50	1 50	1 50	1 50	1 50
Clay-tramper	do			1 83½	1 33½	1 33½	1 00	75	83½	83½	83½	83½	83½
Packer	do			1 50- 1 83½	1 00- 2 00	1 50- 1 83½	1 10½- 1 50	83½- 1 10½	1 00- 1 25	1 00- 1 25	1 00- 1 25	83½- 1 10	83½- 1 10
Driver	do			1 83½	1 83½	1 83½	1 33½	1 00	1 10½	1 10	1 10½	1 10½	1 10½
Laborer	do			1 33½	1 33½	1 33½	1 00	75	83½	83½	83½	83½	83½
Engineer and blacksmith	do			3 00	3 00	2 00½	2 33½	1 83½	1 75	1 75	1 75	1 75	1 75

STATISTICS OF WAGES—FLINT GLASS.

J. H. Hobbs, Brockmanier & Co., Wheeling, West Virginia—Continued.

Classes of employes.	Unit of payment.	DATES.										
		1850.	1855.	1854.	1853.	1852.	1851.	1850.	1849.	1848.	1847.	1846.
Manager	Month ..	\$120 00							\$50 00	\$50 00	\$50 00	\$50 00
Presser	Move ..	87½						\$0 80-	75-	75-	75-	75-
		1 00						1 00	1 00	1 00	1 00	1 00
Finisher	do ..	1 12-						1 00-	1 00-	87-	87-	87-
		1 37						1 25	1 25	1 00	1 00	1 00
Gatherer	do ..	31½										
Stricker-up	do ..	25						18½	18½	18½	18½	18½
Cleaning-off boy	do ..	18½						18½	18½	18½	18½	18½
Carrying-in boy	do ..	18½						18½	18½	18½	18½	18½
Mold-holder	do ..	18½						18½	18½	18½	18½	18½
Blower (easter workman)	do ..	1 12-						1 00-	1 00-	1 00	87-	87-
		1 25						1 25	1 25	1 00	1 00	1 00
Mold-maker, foreman	Day ..							2 50	2 50	2 50	2 50	2 50
Mold-maker, journeyman	do ..	2 00-						1 00-	1 00-	1 00-	1 00-	1 00-
		2 00						2 00	2 00	1 25	1 25	1 25
Mixer	do ..	83½						83	75	75	75	75
Teaser	do ..	1 00						85	85	85	85	85
Pot-filler	do ..	83½							75	75	75	75
Pot-maker	do ..	1 33						80-	1 00	1 00	1 00	1 00
								1 13				
Clay-tramper	do ..	83½						83	75	75	75	75
Packer	do ..	83½						83-	75-	75-	75-	75-
		1 10						1 00	83½	83½	83½	83½
Driver	do ..	1 10½						83½	83½	83½	83½	83½
Laborer	do ..	83½						83½	85	75	75	75
Engineer and blacksmith	do ..							1 50	1 25	1 25	1 25	1 25

REMARKS.—These works give rates of wages each year from 1845, with the exception of 1851-53 and 1867-71, for which dates the pay-rolls are lost. A general line of flint glassware, including lamps and porcelain glass, is made.

There are opportunities for extra earnings both spring and fall from over-time. These are taken advantage of by all classes except workers in the glass-house. These are limited by the unions as to the number of each article made. In numerous cases many more of a given article could be made in a day, but the union forbids it. Glass-makers in the Wheeling district refuse also to work by the piece as at Pittsburgh. How much these opportunities increase earnings is not stated.

There are no allowances or deductions.

From 1845 to 1860 payments were made weekly, part cash and part store-orders. After 1860 orders were abandoned. Up to 1870 weekly payments were continued, but after that date payments were made every two weeks.

From 1845 to 1864 11 hours constituted a day's work for all glass-workers and 10½ hours for all other classes. Beginning with 1865, the hours have been 10 for all classes. The turn, move, or journey, up to 1864 was 6 hours, with half an hour for "piece", or lunch. Since this date the turn is 5 hours from the time molds are taken from the heating oven. In busy seasons 10 or 11 moves are made a week.

The statement is made that from 1845 to 1880 the works have run with comparative regularity, making more over-time than was lost in repairs and other stoppages. At the time of the panic of 1857 two or three months were lost. In the summer of 1861, through the demoralization of business consequent on the breaking out of the war and the enlistment of many of the skilled workmen, a few weeks were lost. In 1876 there was a strike lasting six weeks.

The only statement pertaining to the relation of wages and labor to selling price and cost is, that from 1855 to 1880 wages were 90 per cent. of the cost of cut glassware, and 75 to 80 per cent. of the cost of other grades.

No statement is made as to the efficiency of labor.

The method of work has completely changed in the glass-house since 1845. Molds are better made; furnaces are heated by gas, so three melts can be made per week instead of one; glory-holes, or places where the articles are fire-polished, are heated by benzine, enabling the worker to make a better article in less time and with less cost, though his wages are now double what they were in 1860. A cooling-blast created by a fan driven by steam-power is used on molds and plungers and in cooling down glass in the pots. Snaps, or iron hands or holds, used in holding articles while fire-polishing them, have also been introduced.

STATISTICS OF WAGES—FLINT GLASS.

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An establishment in West Virginia.

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Manager.....	Month	\$130 00													\$78 00
Presser.....	Day	4 20													2 40
Finisher.....	do	4 30													2 50
Gatherer.....	do	2 20													1 10
Sticker-up.....	do	1 20													00
Cleaning-off boy.....	do	1 00													50
Carrying-in boy.....	do	70													35
Mold-holder.....	do	80													40
Blower.....	do	3 00													2 00
Cutter.....	do	2 00													1 50
Engraver.....	do	2 25													1 75
Mold-maker.....	do	2 50													2 00
Machinist.....	do	2 00													2 00
Mixer.....	do	1 00													1 60
Teaser.....	do	2 50													2 00
Pot-filler.....	do	1 50													1 50
Pot-maker.....	do	2 50													2 00
Clay-tramper.....	do	1 50													1 50
Packer.....	do	1 75													1 60
Driver.....	do	2 00													1 50
Laborer.....	do	1 50													1 50
Engineer.....	do	2 00													1 50

REMARKS.—These works were established in 1867. Rates of wages are given only for this year and for 1880. Tableware, lamps, and bar goods are made.

Glass-house workmen have frequent opportunities to make over-time, but seldom take advantage of them. Such over-time as is made is not included in the table, and would increase rates about 8 per cent.

Employes have always been paid fortnightly and in cash.

The regular hours of labor for all classes are, and have been, 10 a day.

There are no allowances or deductions.

These works have been in constant operation since their establishment, except in the fall of 1878, when there was a strike of three months' duration, resulting from a demand of the glass-workers' union for the discharge of an objectionable employé. There have also been some short stoppages for repairs.

Statements in this schedule, under the head of "relation of wages and labor to selling price and cost", include the prices of pitchers, goblets, and lamps, the labor cost of the same, and the percentage of wages to cost of the entire production of the works.

Year.	SELLING PRICE.			LABOR COST.			Percentage of wages to cost of entire product.
	Pitchers, per dozen.	Goblets, per dozen.	Lamps, per dozen.	Pitchers, per dozen.	Goblets, per dozen.	Lamps, per dozen.	
1867.....	\$9 50	\$2 00	\$3 00	\$4 75	\$1 00	\$1 50	Per cent. 50
1870.....	8 00	1 50	2 25	4 00	75	1 13	50
1875.....	6 00	00	1 75	3 00	54	1 05	00
1880.....	4 00	55	1 20	2 03	25	78	05

There is an alleged decrease in the efficiency of labor, ascribed to the action of the glass-blowers' trades-union in restricting apprenticeship and limiting the make of ware.

The only improvement noted in labor-saving machinery is the cooling of the molds and plungers by means of cold air, resulting in an increased production in a given time.

GREEN GLASS.

Out of 40 schedules sent to as many manufacturers of green-glass bottles, etc., but 5 were returned, and but 3 of these were tabulated. For some reason there is a disinclination on the part of those connected with this branch of the glass industry, both employers and employed, to give information. In the 3 schedules tabulated, but one gives rates prior to 1878. Through the returns made to me as special agent in charge of the statistics of glass, I am, however, able to give not only quite a complete table of the rates of wages during the census year, but the number of each class of employes.

Average daily earnings at the green-glass works of the United States during the census year, 1880.

[Continued on next page.]

Classes of employes.	CALIFORNIA.		ILLINOIS.		INDIANA.		KENTUCKY.		MARYLAND.		MISSOURI.	
	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.
Managers.....	1	\$7 00	2	\$4 00	1	Per cent.	1	\$4 10 $\frac{1}{2}$	1	\$5 00	1	.....
Boss blowers.....	1	6 00	2	a 80	2	a 35	1	4 00	1	.....	2	\$5 50
Bottle-blowers.....	14	4 00	72	.....	36	5 50	13	3 50	28	8 25	54	4 75
Vial-blowers.....	6	3 50	.....	.....	.....	.....	4	3 00	12	3 00	.....	.....
Demi-john-blowers.....	2	5 00	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Carboy-blowers.....	1	10 00	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Other blowers.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gatherers or tending boys.....	13	1 25	20	1 12	18	1 00	9	1 00	16	55	28	1 10
Sticker-up boys.....	4	.....	11	50	.....	.....	.....	.....	6	45	.....	.....
Finishers.....	.....	.....	.....	.....	.....	.....	.....	.....	6	3 50	.....	.....
Carrying-in boys.....	12	50	53	50	20	47 $\frac{1}{2}$	9	33 $\frac{1}{2}$	21	45	35	50
Laying-up boys.....	6	1 25	14	75	9	75	3	1 00	7	80	15	83
Master tenses.....	1	4 00	2	3 33	2	3 33 $\frac{1}{2}$	1	2 50	2	3 00	2	3 85
Fillers-in or helpers.....	.....	.....	4	2 00	3	1 50	2	1 10 $\frac{1}{2}$	4	1 50	9	1 85
Coal-wheelers.....	1	1 75	1	1 25	.....	.....	1	1 10 $\frac{1}{2}$	2	1 50	2	2 00
Batch-wheelers.....	1	1 75	4	1 50	3	1 00	.....	.....	2	1 50	.....	.....
Tenses.....	2	2 00	4	2 00	4	1 25	3	1 28 $\frac{1}{2}$	4	1 50	4	2 16
Mixers.....	1	2 50	.....	.....	3	1 00	1	1 33 $\frac{1}{2}$	2	1 50	4	1 00
Lime-sifters.....	1	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wareboys.....	2	1 25	5	1 25	4	1 00	2	58 $\frac{1}{2}$	2	1 50	4	1 88
Pot-makers.....	1	2 50	1	2 50	1	3 88	1	2 00	.....	.....	.....	.....
Pot-makers' assistants.....	1	1 50	1	1 50	1	1 00	.....	.....	.....	.....	.....	.....
Clay-trampers.....	1	1 50	1	1 50	11	1 00	.....	.....	1	1 50	.....	.....
Grinders.....	1	1 50	1	1 50	5	83 $\frac{1}{2}$	.....	.....	.....	.....	1	1 50
Boss packers.....	1	3 00	1	2 00	1	2 00	1	1 10 $\frac{1}{2}$	2	2 00	1	2 00
Demi-john-coverers.....	20	75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packers.....	3	2 00	12	1 50	5	1 25	2	89 $\frac{1}{2}$	6	1 50	10	1 50
Carpenters.....	1	2 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	1	2 50	2	2 00	.....	.....	1	1 50	.....	.....	.....	.....
Laborers.....	4	1 50	4	1 50	.....	1 00	.....	.....	30	1 50	.....	.....

a This is in addition to earnings as blower.

STATISTICS OF WAGES—GREEN GLASS.

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Average daily earnings at the green-glass works of the United States during the census year, 1880—Continued.

Classes of employes.	NEW JERSEY.				NEW YORK.				PENNSYLVANIA.							
									EASTERN DISTRICT.				PITTSBURGH DISTRICT.			
	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.
Managers	1	.....	2	\$2 75	.....	.....	1	\$5 50	1	\$3 25	1	\$6 00	1	\$4 00	.....	.....
Boss blowers	2	\$0 38	3	4 00	1	\$4 43	2	5 00	.....	.....	1	5 00	2	4 00	.....	.....
Bottle-blowers	27	3 50	44	3 25	.....	.....	24	3 50-4 50	20	2 55	27	4 50	40	3 50	.....	.....
Vial-blowers	14	3 00	20	3 85	.....	.....	.....	.....	.....	.....	6	4 50	11	3 50	.....	.....
Demijohn-blowers	2	3 50	1	4 00	10	3 43	.....	.....	2	2 00	.....	.....	.....	.....	.....	.....
Carboy-blowers .....	.....	.....	.....	.....	.....	.....	.....	.....	2	3 80	.....	.....	.....	.....	.....	.....
Other blowers	2	3 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gatherers or tending boys ..	14	58	23	1 15	10	83½	13	1 18	15	1 10	14	1 00	42	75	.....	.....
Sticker-up boys	14	38	30	53	4	60	.....	.....	.....	.....	7	70	.....	.....	.....	.....
Finishers	7	3 00	10	3 85	8	50-92	.....	.....	.....	.....	5	4 50	.....	.....	.....	.....
Carrying-in boys	6	38	10	60	5	60	14	58	7	66	10	70	60	60	.....	.....
Laying-up boys	8	1 10	14	1 00	4	83½	6	1 34	6	66	7	1 00	20	1 00	.....	.....
Master teasers	2	3 00	3	3 08	1	3 04	.....	.....	1	3 80	1	4 00	2	3 00	.....	.....
Fillers-in or helpers	3	1 00	.....	.....	1	1 35	.....	.....	3	2 00	4	2 00	.....	.....	.....	.....
Coal-wheelers	2	1 00	.....	.....	1	1 32	2	1 12½	1	1 60	1	2 25	2	2 00	.....	.....
Batch-wheelers	1	1 00	.....	.....	.....	.....	2	1 12½	1	2 00	.....	.....	2	2 00	.....	.....
Teasers	2	1 40	6	1 55	2	1 35	2	1 25	.....	.....	3	2 00	4	2 00	.....	.....
Mixers	2	1 50	7	1 50	2	1 45	.....	.....	1	2 00	1	2 50	2	1 60	.....	.....
Lime-sifters	2	1 00	.....	.....	.....	.....	1	1 25	.....	.....	1	2 00	2	1 66	.....	.....
Wareboys	2	1 50	4	1 65	2	1 00	4	1 00	.....	.....	3	1 50	5	62	.....	.....
Pot-makers	1	2 50	1	2 30	1	3 00	.....	.....	1	2 50	1	4 00	1	2 00	.....	.....
Pot-makers' assistants	1	1 00	4	1 15	1	1 25	.....	.....	1	1 33	.....	.....	3	1 25	.....	.....
Clay-trampers	3	1 00	.....	.....	.....	.....	.....	.....	.....	.....	1	1 40	2	1 25	.....	.....
Grinders	2	1 00	.....	.....	7	80-1 05	8	58	.....	.....	1	1 40	.....	1 25	.....	.....
Boss packers	1	1 60	3	1 65	1	1 55	1	1 07	1	2 08	1	3 50	1	2 33	.....	.....
Demijohn-coverers	2	1 00	2	1 12½	.....	.....	.....	.....	6	1 00-2 00	.....	.....	.....	.....	.....	.....
Packers	8	1 20	9	1 37½	3	1 30	5	1 00-1 25	1	1 33	5	2 25	6	1 60	.....	.....
Carpenters .....	.....	.....	8	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths .....	.....	.....	3	2 31	1	2 00	.....	.....	1	2 10	1	2 50	.....	.....	.....	.....
Laborers .....	.....	.....	23	1 12½	2	1 00-1 25	.....	.....	.....	.....	4	1 40	.....	.....	.....	.....

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Whitney Bros., Glassboro', New Jersey.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1881.	1880.	1879.	1878.			1881.	1880.	1879.	1878.
Manager	Month ..	\$84 50	\$65 00-84 50	\$58 50-65 00	\$68 50	Master teaser	Day ..	\$3 85	\$3 85	\$3 85	\$3 85
Bottle-blower	Day ..	4 00	3 75-4 00	3 50-3 75	3 50	Coal-wheeler	do ..	1 10	1 10	1 10	1 00
Vial-blower	do ..	5 00	4 00-5 00	3 50-4 00	3 50	Teaser	do ..	1 35	1 35	1 35	1 35
Demijohn-blower	do ..	.....	6 25	4 50-6 25	4 50	Mixer	do ..	1 70	1 66½-1 70	1 66½	1 66½
Carboy-blower	do ..	.....	6 75	4 50-6 75	4 50	Lime-sifter	do ..	1 70	1 66½-1 70	1 66½	1 66½
Gatherer or tending boy	do ..	85	70-85	70	70	Wareboy	do ..	1 75	1 75	1 75	1 75
Sticker-up boy	do ..	50	40-50	40	40	Pot-maker	do ..	2 70	2 70	2 70	2 70
Finisher	do ..	5 00	4 00-5 00	3 50-4 00	3 50	Pot-maker's assistant ..	do ..	1 25	1 00-1 25	1 00	1 00
Carrying-in boy	do ..	70	60-70	50-60	50	Clay-tramper	do ..	1 10	1 00-1 10	1 00	1 00
Laying-up boy	do ..	1 30	1 20-1 30	1 20	1 20	Grinder	do ..	1 75	1 75	1 75	1 75
						Packer	do ..	1 45	1 35-1 45	1 35	1 35

STATISTICS OF WAGES—GREEN GLASS.

Whitney Bros., Glassboro', New Jersey—Continued.

REMARKS.—These works were established in 1775, and make all classes of green hollow ware, such as bottles, vials, carboys, demijohns, etc. Rates of wages are given for 3 years only. The supplementary and explanatory statements, however, are quite interesting.

There are but few opportunities for over-work, and when they do occur very few of the men care to avail themselves of them. There are no allowances or deductions.

Up to 1878 wages were paid on application, but since that date twice every week. This is the only example in these returns of regular payments oftener than every week. When wages are paid on application, money is drawn at irregular intervals, and frequently oftener than weekly. This custom of payment twice every week is doubtless to prevent the trouble of constant and irregular applications for money.

Up to 1879 about one-quarter of the wages was paid in store-orders. Since that date, however, the payments have been wholly in cash.

As the greater part of the work is piece-work, it is difficult to give hours of labor. The hours are short, being 8 or 9 hours for all classes except teasers, who are at the factory 12 hours a day, but as they are at work but about 9 of the 12, they are perfectly satisfied.

These works are operated on an average 10 months a year, being idle generally in July and August, owing to the warm weather and for repairs.

The selling prices and labor cost of several of the principal articles produced at these works are as follows:

Selling prices per gross of green-glass hollow ware, New Jersey.

Year.	MASON FRUIT-JARS.		FLASKS.		5's, wines.
	Quart.	1-gallon.	1-pint.	Pint.	
1875	\$14 50	\$18 00	\$2 50	\$3 75	\$6 00
1880	14 50	18 00	3 00	4 50	7 00

Labor cost per gross of green-glass hollow ware, New Jersey.

Year.	DRUGGISTS' WARE.			MASON FRUIT-JARS.		Pint flasks.	Quart wines.
	1-ounce, pressed.	4-ounce, panel.	8-ounce, oval.	Quart	1-gallon.		
1875	\$0 73	\$0 91	\$1 12	\$1 62	\$2 25	\$1 66	\$2 74
1880	80	1 02	1 25	1 80	2 50	1 85	3 05

There has been an increase in the efficiency of labor, arising from the stimulating effect of increased wages.

No labor-saving machinery has been introduced.

William Eliot Smith, Saint Louis, Missouri.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Manager	Month ..	\$4 10½							\$3 33½
Blower	Day	4 00½							4 00
Gatherer or tending boy	do	1 16½							83½
Sticker-up boy	do	50							40
Carrying-in boy	do	50							40
Laying-up boy	do	75							75
Master teaser	do	4 16½							3 33½
Filler-in or helper	do	1 00½							1 00½
Coal-wheeler	do	1 25							1 25
Batch-wheeler	do	1 00½							1 50
Teaser	do	2 00							2 00
Mixer	do	1 00½							1 53
Lime-sifter	do	1 00½							1 50
Pot-maker	do	3 33½							3 33½
Clay-tramper	do	1 00½							1 50
Boss packer	do	2 25							2 00
Packer	do	1 50							1 50

REMARKS.—These works were established in 1871, and produce all varieties of amber and green glass, such as beer and mineral-water bottles, fruit-jars, and druggists' ware. Rates of wages are given only for the years 1873 and 1880. The statement is made that there was no permanent advance in wages between these two dates. There was an occasional reduction of 10 per cent., which reduction would afterward be canceled. In 1880 there was a marked advance.

There have been no opportunities for extra earnings, nor are there any allowances or deductions.

Night-men have always worked 12 hours a day, laborers 10 hours, and blowers, gatherers, and glass-house boys 10 hours.

From 1873 to 1875 the works were in operation an average of 9½ months a year; 1876 to 1879, an average of 9½, and for the year ending June 1, 1880, 10 months. In 1874 there was a strike lasting two weeks, and in 1876-77 one lasting 3½ months. The idleness at other times has been in July and August, in which months it is stated that glass can not be made at a profit.

Payments have always been weekly in cash.

The following statement regarding selling prices and percentage of wages to cost of green glass is given in the schedule:

Year.	SELLING PRICES PER GROSS.		Percentage of wages to cost of entire product.
	Wax fruit-jars, 1 quart.	Export beer-bottles, 1 quart.	
1873	\$8 50	\$8 00	50
1875	7 00	6 50	
1878	5 50	5 50	
1880	7 00	7 00	45

There has been no change in the efficiency of labor.

No labor-saving machinery or improvements have been introduced.

Moore Brothers, Clayton, New Jersey.

Classes of employes.	Unit of payment.	DATES.			Classes of employes.	Unit of payment.	DATES.		
		1880.	1879.	1878.			1880.	1879.	1878.
Boss blower	Day	a\$4 50	\$1 00	\$3 75	Laying-up boy	Day	\$1 00	\$1 00	\$0 75
Bottle-blower	do				Master teaser	do	3 00	3 00	3 00
Vial-blower	do				Batch-wheeler	do	1 50	1 50	1 50
Demijohn-blower	do				Teaser	do	1 60	1 60	1 60
Carboy-blower	do				Pot-maker	do	2 75	2 50	2 50
Other blowers	do	1 00	1 00	1 00	Packer	do	1 40	1 40	1 25
Gatherer or tending boy	do				Laborer	do	1 12½	1 12½	1 00
Carrying-in boy	do						1 25		

a Blowers work by the gross, dozen, etc. We give here the *average daily earnings*.

REMARKS.—These works were established in 1856, and make all kinds of green-glass hollow ware.

Boys and laborers have frequent opportunities for extra earnings, though they do not always take advantage of them. Extra pay has not been included in the table, and would increase the wages of those who work over-time some 10 per cent. There are no allowances and no deductions whatever. All tools and help are furnished by the firm, except in the case of carpenters and masons, who furnish their own tools.

Since 1870 employes have been paid on application. There is a store connected with these works, but employes are not required to trade at it, receiving cash if they prefer it.

Since 1870, the teasers or shearers work 12 hours a day; carpen-

ters, other mechanics, and laborers, 10 hours; blowers, gatherers, and glass-house boys, 8.

In the time covered by the schedule the works were operated 10 or 11 months a year, stopping, as is usual, in the hottest part of the summer for rest or repairs.

Strikes have interfered with the running of the works to a very slight extent.

There is no statement concerning the relation of wages and labor to selling price and cost.

A statement is made that the blowers produce a third more work in the day than they did ten years ago. This increased efficiency is the result of the better facilities furnished by the establishment.

No remarks concerning labor-saving machinery and improvements.

PLATE GLASS.

No returns of wages in this branch of the glass industry were received in reply to the wages schedules. Its establishment in this country is quite recent, and the rates at most of the works in operation would, at best, have been for a very few years. In the returns received by me as special agent in charge of the statistics of glass were statements of rates of wages paid in the census year, which are tabulated below. These statements also give the number of employes of each class, which adds greatly to the value and interest of the tables. The establishments whose rates of wages are included in the first table, that relating to polished plate, are all west of the Alleghany mountains. Those in the other table, relating to rough plate, are east of the Alleghanies.

Number of employes of each class, and average earnings, at plate-glass works making polished and rough plate during the census year, 1880.

Classes of employes.	POLISHED PLATE.						ROUGH PLATE.				Classes of employes.	POLISHED PLATE.						ROUGH PLATE.			
	No. 1.		No. 2.		No. 3.		No. 4.		No. 5.			No. 1.		No. 2.		No. 3.		No. 4.		No. 5.	
	Number of employes.	Rate per day.	Number of employes.	Rate per week.	Number of employes.	Rate per day.	Number of employes.	Rate per day.	Number of employes.	Rate per month.		Number of employes.	Rate per day.	Number of employes.	Rate per week.	Number of employes.	Rate per day.	Number of employes.	Rate per day.	Number of employes.	Rate per month.
Founders	0	\$2 85	2	\$20 00	2	\$3 88	1	\$2 00	2	\$60 00	Glass-packers	5	\$2 00	1	\$14 00	4	\$1 50	1	\$1 05	1	\$35 00
Gas-makers or teasers.	1	1 25	2	11 00	4	2 00			2	40 00	Machinists	0	2 50	4	7 50	12	2 50			1	40 00
Teamers or pourers	4	2 00	2	14 00	2	2 50	1	1 40	2	30 00	Blacksmiths	2		1	12 00	2	2 75			1	45 00
Rollermen	6	1 80		7 50	12	1 50	2	1 15	2	30 00	Firemen	4	1 80	2	7 50	4	1 50				
Kiln-froemen	8	1 50	1	11 00	1	1 80	1	1 15	2	35 00	Engineers	8	2 25	4	7 50	4	2 25				
Furnacemen	12	1 50	2	11 00	24	1 50	18	1 15	2	30 00		8 00		18 00							
Grinders	24	2 25	11	10 00	20	2 00					Carpenters	4	2 00	3	7 50	5	2 00			1	40 00
				18 00								18 50									
Smoothers	24	2 02½	8	7 50	25	2 00					Bricklayers	5	2 25	1	18 50	3	3 00				
				20 00								3 00									
Polishers	24	3 13	16	7 50	25	2 00					Furnace-builders					1	3 88				
				20 00							Teamsters	0	1 25	1	8 00	6	1 00				
Mixers	5	1 25	3	7 50	2	1 50	1	1 30	2	35 00	Sand-quarrymen					10	1 50				
				12 00							Millmen	2	1 06½			2	1 75				
Pot-makers	2	3 00	1	20 00	2	3 00			1	60 00	Plaster-burners	2	1 35	2	8 00	1	1 50				
Croosmen	2	1 60½	1	12 00	1	2 00															
Cutters	8	2 50	1	14 00	3	3 08	2	2 00	2	65 00											

NOTES ON ABOVE TABLE.—No. 1 works were operated but 7 months during the census year. Seventeen weeks of the idle time were due to a strike.

No. 2. About one-half the employes at these works are paid by the 1,000 feet. The rates given are the average earnings. Boys, of whom 15 are employed, and girls, of whom 4 are employed, are paid \$3 per week. The above table does not include these wages. A day's work is 10 hours.

No. 3. These works were in operation the entire year. A day's

work of the men in the glass-house and the grinding, smoothing, and polishing departments is 12 hours; and of the other classes, 10 hours.

No. 4. These works were in operation but 5 months in the census year as a plate-glass works. They were then changed to a window-glass-house. The founders work 15½ hours a day; other glass-house men 12 hours, and other workmen 10 hours.

No. 5. These works were in operation but 5 months in the census year. A day's work is from 10 to 11 hours.

WINDOW GLASS.

Of the 54 schedules sent to as many window-glass manufacturers but 5 were returned, and of these but 4 are tabulated. These 4, however, fairly well represent the industry, one being from each of the states of New Jersey, New York, Ohio, and Pennsylvania. Here, however, as in the case of the other three branches of the glass industry, I am able to supplement these tables with statements from the reports furnished me as special agent in charge of the statistics of glass.

Average daily earnings and number of employes at certain of the window-glass works of the United States during the census year, 1880.

[Continued on next page.]

Classes of employes.	ILLINOIS.		INDIANA.		MARYLAND.		MASSACHUSETTS.		MICHIGAN.		MISSOURI.		NEW JERSEY.						NEW YORK.			
	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.
Managers.....	1	.....	1	Pr. et.	.....	.....	.....	.....	1	\$2 00	.....	.....	1	\$3 00	1	.....	1	\$3 00	1	\$3 33	.....	.....
Glass blowers.....	2	\$5 15	3	a\$0 33½	2	\$3 08	.....	.....	1	3 83	1	.....	2	4 00	2	\$2 57	2	\$3 88	2	4 00	1	4 00
Blowers.....	20	4 50	31	6 00-10 00	14	2 88	10	.....	8	3 50	7	.....	14	3 80	15	2 18	10	3 50	15	3 52	10	3 00-3 50
Gatherers or tending boys.	20	2 80	31	2 50-5 00	10	1 73	10	.....	8	2 25	7	.....	10	2 00	b10 c10	2 04 80	b24 c8	2 15 88	b17 c10	1 70 90	10	2 00-2 50
Master tappers.....	2	4 40	3	2 83	2	2 88	2	\$3 08	1	3 83	1	\$3 10	2	3 00	2	2 70	2	2 14	2	3 52	1	3 45
Master tappers' helpers	0	2 20	.....	.....	4	1 53	2	1 54	1	1 50	1	1 85	.....	.....	.....	4	1 17	.....	.....	1	1 54	
Tappers.....	0	2 00	0	1 25	2	1 53	4	1 02	2	1 40	3	1 85	0	1 25	0	1 50	2	1 00	0	1 54	2	1 35
Lime-sifters.....	2	1 55	.....	.....	.....	.....	.....	.....	1	1 12½	1	1 25	.....	.....	.....	2	1 00	.....	.....	.....	.....
Mixers.....	2	1 00	7	1 00-1 50	2	1 73	2	1 54	2	1 25	2	1 07	2	2 00	2	1 70	3	1 00	2	1 70	1	1 54
Batch-wheelers or fillers-in.	2	1 25	0	1 50	2	1 53	.....	.....	2	1 33	.....	.....	.....	.....	.....	2	1 00	.....	.....	.....	.....
Coal-wheelers.....	2	1 70	.....	.....	.....	.....	1	1 54	1	1 25	1	1 50	.....	.....	.....	2	1 00	2	1 15	1	90	
Flattoners.....	5	3 00	8	3 40	4	2 00	4	.....	2	3 00	2	.....	4	3 80	4	2 70	4	3 50	0	2 81	2	3 50
Layers-out.....	3	1 50	4	2 12½	2	1 35	.....	.....	2	1 50	1	1 50	2	1 75	2	1 55	2	1 75	2	1 31	.....	.....
Layers-in.....	4	1 50	4	1 87½	2	1 15	.....	.....	1	1 25	1	1 07	2	1 00	2	1 55	2	1 75	2	1 42	.....	2 1 20
Leer-tenders.....	2	1 50	4	2 25½	2	1 35	.....	.....	1	1 25	2	1 50	2	1 75	2	1 70	2	1 75	2	1 05	2	90
Roller-boys.....	3	75	4	1 12½	2	58	4	1 00	3	50	1	1 00	2	00	2	54	2	38	4	02	2	85
Pot-makers.....	1	2 50	1	5 00	1	4 10½	1	2 00	1	3 00	1	2 33	1	2 50	1	1 54	1	2 50	1	2 00	1	2 50
Clay-trampers.....	2	1 33	10	1 00	3	1 33½	0	1 00	3	1 10	2	1 25	3	1 10	4	1 10	3	1 00	3	1 00	2	1 00
Boat cutters.....	1	2 88	1	.....	.....	.....	.....	.....	1	.....	1	1 07	.....	.....	.....	2	3 00	.....	.....	1	4 00	
Cutters.....	7	3 80	13	.....	8	3 33½	8	.....	3	3 00	3	.....	8	3 00	9	2 04	8	2 50	10	2 70	5	3 00
Packers.....	2	1 80	3	3 11	2	1 33½	2	1 50	2	2 00	1	1 07	2	2 00	2	1 50	b1 c2	1 25 50	3	1 15	1	1 50
Drivers.....	2	1 25	0	1 00	4	1 10½	.....	.....	3	1 00	1	1 50	5	1 25	2	1 40	0	1 10	4	1 15	2	1 00
Laborers.....	13	1 25	0	1 00	2	1 00	23	1 00	3	1 00	0	1 25	11	1 10	0	1 10	5	1 00	20	1 00	2	1 00
Box-makers.....	1	1 50	.....	.....	.....	.....	3	1 50	.....	.....	3	1 00-1 25 1 07	.....	.....	3	1 50	.....	.....	5	1 25	.....	.....
Engineers.....	1	3 15	.....	.....	.....	.....	.....	.....	.....	.....	1	1 17	.....	.....	2	1 50	.....	.....	2	1 50	.....	.....
Blacksmiths.....	1	2 75	.....	.....	.....	.....	1	2 00	1	2 00	.....	.....	.....	.....	1	1 60	.....	.....	.....	.....	.....
Watchmen.....	1	1 25	.....	.....	.....	.....	.....	.....	1	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

a Additional per day to earnings as a blower.

b Men.

c Boys.

STATISTICS OF WAGES—WINDOW GLASS.

Average daily earnings and number of employes at certain of the window-glass works of the United States during the census year, 1880—Continued.

Classes of employes.	OHIO.				PENNSYLVANIA.															
					EASTERN DISTRICT.				WESTERN DISTRICT OUTSIDE PITTSBURGH.		PITTSBURGH DISTRICT.									
	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.	Number of employes of each class.	Average daily earnings.		
Managers.....	1	.....	1	\$5 00	.....	.....	1	\$2 00	2	\$3 00	1	\$5 75	1	\$4 00	1	\$5 00	1	\$4 50	1	\$4 16
Boss blowers	1	\$0 00	1	0 00	.....	.....	1	3 00	1	0 00	3	5 30	1	4 00	2	5 00	5	7 80	1	4 56
Blowers	10	4 80	10	5 00	17	\$3 27- 3 85	7	2 70	7	5 00	17	\$5 00 66 73	10	3 00	18	4 00 5 00	26	5 05	10	4 10
Gatherers or tending boys.	10	2 40	10	3 00	17	\$2 12- 2 88	8	2 00	8	3 56	20	\$2 88 63 45	10	2 00	20	2 00 3 00	26	2 03	10	2 40
Master teasers.....	1	3 40	1	4 00	2	.....	1	2 70	1	3 75	3	3 85	1	3 00	2	3 33	2	3 25	1	3 00
Master teasers' helpers	1	1 02	1	2 50	.....	.....	1	1 54	1	1 00	1	2 00	1	2 00	.....	.....	3	2 50	1	2 00
Teasers.....	3	1 85	3	2 00	5	1 27	2	1 54	3	1 00	6	2 10	3	2 00	6	2 00	11	2 00	3	2 00
Line-sifters	1	1 83	1	1 75	.....	.....	1	1 54	1	1 00	3	2 10	1	2 00	1	1 83	1	2 00	1	1 00
Mixers	1	2 00	1	1 75	1	1 35	1	1 54	1	1 00	2	2 33	1	2 00	2	2 00	2	2 00	1	1 00
Batch-wheelers or fillers-in.	2	1 83	1	2 00	.....	.....	.....	.....	.....	.....	0	2 00	1	2 00	2	2 00	3	2 00	1	2 00
Coal-wheelers.....	2	1 83	1	2 00	3	1 31	.....	.....	1	1 00	1	2 00	1	2 00	2	2 00	3	2 00	1	2 00
Flatteners	3	2 50	3	4 00	2	3 85	2	2 70	2	5 00	4	5 75	3	3 00	4	4 00- 5 00	7	4 50	3	3 46
Layers-out	3	1 83	3	2 00	2	1 54	.....	.....	2	1 00	2	2 33	3	1 00	2	2 00	2	2 00	2	2 00
Layers-in .....	.....	.....	.....	.....	2	00	.....	.....	.....	.....	2	2 33	3	1 00	2	2 00	10	3 00	1	2 00
Leer-tenders	2	1 00	2	1 75	2	1 35	2	1 34	2	1 50	2	2 10	2	1 00	2	2 00	5	1 87	2	2 00
Roller-boys	2	88	2	75	1	38	2	1 00	0	75	0	1 00	2	00	2	1 50	4	85	2	00
Pot-makers	1	3 40	1	4 00	.....	.....	1	2 12	1	3 00	1	3 45	1	3 00	1	3 50	1	4 25	1	3 50
Clay-trampers	2	1 00	2	1 00	1	1 10	1	1 25	2	1 37	1	1 00	1	1 00	2	2 00	6	1 50	1	1 00
Boss cutters	1	4 00	1	4 00	.....	.....	1	3 00	1	5 00	1	3 85	1	7 00	1	3 50	1	4 50	1	5 10
Cutters	4	4 00	4	3 50	8	2 50	3	2 70	3	4 50	0	3 45	3	3 00	3	2 00- 3 00	0	3 30	4	4 16
Packers	1	2 70	1	3 00	1	1 27	1	2 12	2	2 00	1	3 08	1	2 50	2	2 00- 3 00	2	2 10	2	2 00
Drivers .....	.....	.....	1	1 00	1	1 27	1	1 25	.....	.....	3	1 00	1	1 50	3	2 00- 2 50	4	1 50	1	1 50
Laborers	2	1 58	1	1 50	7	1 10	8	1 25	5	1 37	2	1 25	1	1 50	10	1 50	5	1 50	6	1 50
Box-makers .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Engineers .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths .....	.....	.....	1	1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

a Single strength.

b Double strength.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Warrick & Stanger, Glassboro', New Jersey.

Classes of employés.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Manager.....	Month....	\$83 33	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00
Boss blower.....	Day.....	3 47	3 47	3 47	3 86	4 24	3 00	3 00	4 24	4 24
Blower.....	do.....	3 07	3 07	3 07	3 40	3 84	3 20	3 20	3 84	3 84
Gatherer or tending boy.....	do.....	2 00	1 63	1 53	1 05	1 02	1 53	1 53	2 11	2 11
Master tenser.....	do.....	3 20	3 20	3 20	3 20	3 20	3 20	3 20	3 20	3 20
Tenser.....	do.....	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 01	1 53
Mixer.....	do.....	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 01	1 53
Flattener.....	do.....	3 07	3 07	3 07	3 40	3 84	3 20	3 20	3 84	3 84
Laver-out.....	do.....	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 01	1 53
Laver-in.....	do.....	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 01	1 53
Leer-tender.....	do.....	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 01	1 53
Roller-boy.....	do.....	58	58	58	58	40	40	40	40	40
Pot-maker.....	do.....	2 00	2 00	2 00	2 00	2 00	2 30	2 00	2 00	2 00
Clay-tramper.....	do.....	1 25	1 10	1 10	1 25	1 25	1 25	1 25	1 40	1 40
Cutter.....	do.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	3 84	3 84
Packer.....	do.....	1 02	1 02	1 73	1 53	1 02	1 73	1 02	1 02	1 02
Driver.....	do.....	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15
Laborer.....	do.....	1 25	1 10	1 10	1 25	1 25	1 25	1 25	1 40	1 40

Classes of employés.	Unit of payment.	DATES.								
		1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Manager.....	Month....	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$64 17	\$64 17	\$64 17
Boss blower.....	Day.....	4 24	4 24	5 01	5 01	5 01	5 01	5 20	4 36	4 24
Blower.....	do.....	3 84	3 84	4 61	4 61	4 61	4 61	4 80	3 96	3 84
Gatherer or tending boy.....	do.....	2 11	2 11	1 92	2 30	3 07	3 07	2 30	1 92	1 53
Master tenser.....	do.....	3 20	3 20	3 20	3 20	3 20	3 20	3 20	3 20	2 80
Tenser.....	do.....	1 53	1 65	1 65	1 65	1 73	1 73	1 65	1 53	1 53
Mixer.....	do.....	1 53	1 65	1 65	1 65	1 73	1 73	1 65	1 53	1 53
Flattener.....	do.....	3 84	3 84	4 61	4 61	4 61	4 61	4 80	3 96	3 84
Laver-out.....	do.....	1 53	1 65	1 65	1 65	1 73	1 73	1 65	1 53	1 53
Laver-in.....	do.....	1 53	1 65	1 65	1 65	1 73	1 73	1 65	1 53	1 53
Leer-tender.....	do.....	1 53	1 65	1 65	1 65	1 73	1 73	1 65	1 53	1 53
Roller-boy.....	do.....	40	40	40	40	40	40	40	40	40
Pot-maker.....	do.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Clay-tramper.....	do.....	1 40	1 40	1 25	1 25	1 25	1 50	1 50	1 50	1 50
Cutter.....	do.....	3 84	3 40	4 03	4 61	4 61	4 80	4 61	3 84	2 03
Packer.....	do.....	1 02	1 02	1 02	1 02	1 02	1 02	1 73	1 73	1 84
Driver.....	do.....	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15
Laborer.....	do.....	1 40	1 40	1 40	1 40	1 40	1 50	1 50	1 00	1 00

REMARKS.—These works, though established in 1831 for making other glass, did not begin the manufacture of window glass until 1863. Rates of wages are given for all the years from this last date.

There have been no opportunities for extra earnings at these works, nor are there any allowances. Some employés are obliged to pay out a small part of their wages for tools, etc., as, for example, the cutters find their own diamonds. Such payments, however, amount to a very small percentage of the wages received.

The interval of payment has been weekly since 1863. Payments now are wholly in cash. Store-orders were used in part payment up to April, 1883, when they were abandoned in conformity to a law passed by the legislature of the state.

During the time covered by this schedule, flatteners and teasers have worked 12 hours a day; cutters, packers, and laborers, 10 hours; tenders, 9 hours; and blowers, 8½ hours.

In 1863 and 1864 the works were in operation an average of 9 months a year; from 1865 to 1870, 8½ months; from 1871 to 1880, 9 months. The cause of this irregularity has been the necessity

for repairs to the furnaces. In 1865 two months were lost by a strike.

The following statement as to the cost of labor and the percentage of wages to cost of window glass in a New Jersey manufactory is given in the schedule:

Year.	Cost of labor per box of window-glass.	Percentage of wages to cost.
1864.....	\$1 02	Per cent. 50
1870.....	1 02	50
1875.....	1 63	50
1880.....	1 50	50

There has been no increase in the efficiency of labor.

No labor-saving machinery or improvements have been introduced.

STATISTICS OF WAGES—WINDOW GLASS.

Syracuse Glass Company, Syracuse, New York.

Classes of employes.	Unit of payment.	DATES.													
		1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Manager	Month..	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$150 00	\$100 00	\$100 00	\$100 00	\$100 00
Boss blower	Day	3 38	3 38	3 77- 4 15	4 15- 4 73	4 73	4 73	4 73- 5 11	5 11	5 11	5 11	5 11	5 11	5 11- 6 31	6 31
Blower	do	3 07	3 07	3 40- 3 84	3 84- 4 42	4 42	4 42	4 42- 4 80	4 80	4 80	4 80	4 80	4 80	4 80- 6 00	6 00
Gatherer or tending boy	do	1 53	1 53	1 53- 1 92	1 53- 1 92	1 92	1 92	1 92- 2 30	2 30	2 30	2 30	2 30	2 30	2 30- 2 88	2 88
Master tensor	do	3 07	3 07	3 07	3 07	3 07	3 07- 3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84	3 84
Master tensor's helper	do	1 73	1 73	1 73	1 73	1 73	1 73- 1 92	1 92	1 92	1 92	1 92	1 92	1 92	1 92	1 92
Tensor	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Line-sifter	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Mixer	do	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½
Batch-wheeler or filler-in	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Coal-wheeler	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Flattener	do	3 07	3 07- 3 46	3 46- 3 84	3 84- 4 42	4 42	4 42	4 42- 4 80	4 80	4 80	4 80	4 80	4 80	4 80- 6 00	6 00
Leer-tender	do	1 34	1 34	1 34	1 34- 1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53
Pot-maker	do	1 92	1 92	1 92	1 92	1 92- 3 07	3 07	3 07	3 07- 3 84	3 84	3 84	3 84	3 84	3 84	3 84
Clay-tramper	do	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Boss cutter	do	3 04½	3 04½	3 04½	3 04½- 3 84½	3 84½	3 84½	3 84½- 4 22½	4 22½	4 22½	4 22½	4 22½	4 22½	4 01½- 4 90½	4 90½
Cutter	do	3 26	3 26	3 26	3 26- 3 40	3 40	3 40	3 40- 3 84	3 84	3 84	3 84	3 84	3 84	4 23- 4 01	4 01
Packer	do	1 73	1 73	1 73	1 73	1 73	1 73- 1 92	1 92	1 92	1 92	1 92	1 92	1 92	1 92	1 92
Driver	do	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53	1 53- 1 73	1 73	1 73	1 73
Laborer	do	1 00	1 00	1 00	1 00	1 00- 1 15	1 15	1 15	1 15	1 15	1 15- 1 34	1 34	1 34	1 34	1 34

REMARKS.—These works were established in 1863. Rates of wages are given from 1866.

Some employes are obliged to pay out a small part of their wages for tools, etc., as, for example, the cutters find their own diamonds. Such payments, however, amount to a very small percentage of the wages received.

The men are paid from \$8 to \$10 per week "market-money"; and on the 15th of every month the balance due for the previous month is paid. Payments are always in cash.

There have been no changes in the hours of labor since 1864. Tensers work 12 hours a day 7 days in the week; blowers, 10 hours a day 5 days in the week; and all other help, 10 hours a day 6 days a week.

From 1866 to 1875 the works were in operation on an average 9 months a year; from 1876 to 1880, 10 months a year, the chief cause of idleness being the regular stop 2 months in the summer for repairs.

These works report that they have had no strike for 14 years.

The following statement as to prices of product, labor cost, and percentage of wages to cost is given:

Year.	Average price per box of 50 feet.	Cost of labor per box of 50 feet.	Percentage of wages to cost.
			<i>Per cent.</i>
1866	\$5 50	\$1 75	50
1870	2 75	1 12	50
1875	3 18	1 12	50
1880	2 75	1 10	50

These works make an interesting showing as to the cost of glass per 50 feet. The following are given as the cost of labor and materials for the years named per box of 50 feet:

Year.	Cost of labor and materials.
1866	\$3 50
1870	2 25
1875	2 25
1880	2 20

To this estimate add—

Breakage of pots and loss of metal, per box	\$0 10
Building over furnace and repairs, per box	25
Incidental expenses, per box	10

Total..... 45

The statement is made that many of the men might make extra time, but they seldom do so, owing to the rules of the union.

These works report an increased efficiency among the workmen, stating that the blowers make about 40 boxes a month more now than they did a few years ago; but the reason for this increased efficiency is not given.

These works report that they use no labor-saving machinery, but have made improvements in furnaces and flattening-ovens which have been of great advantage in increasing production and improving quality of product.

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Classes of employes.	Unit of payment.	DATES.										
		1860.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Boss blower	Day....	\$5 48	\$4 23	\$4 07	\$5 00	\$5 40	\$5 35	\$4 65	\$5 10	\$7 40	\$7 40	\$7 40
Blower .....	..do....	5 48	4 23	4 70	5 00	5 40	5 35	4 05	5 10	7 40	7 40	7 40
Gatherer or tending boy .....	..do....	3 16	2 50	2 80	3 03	3 33	3 45	4 00	5 00	5 00	5 00	5 00
Master teaser.....	..do....	3 33	3 33	3 33	3 33	3 33	3 33	4 00	4 00	4 00	4 00	4 00
Master teaser's helper .....	..do....	1 33	1 06	2 15	2 15	2 05	2 05	2 15	2 00	2 00	2 30	2 00
Teaser.....	..do....	1 06	1 50	2 05	2 05	2 05	2 05	2 15	2 15	3 00	3 00	3 00
Lime-sifter .....	..do....	1 06	1 50	2 05	2 05	2 05	2 05	2 15	2 00	2 50	2 50	2 50
Mixer .....	..do....	1 06	1 50	2 05	2 05	2 05	2 05	2 15	2 00	2 50	2 50	2 50
Batch-wheeler or filler-in .....	..do....	1 06	1 50	2 05	2 05	2 05	2 05	2 15	2 00	2 75	2 75	2 75
Coal-wheeler .....	..do....	1 06	1 50	2 05	2 05	2 05	2 05	2 15	2 00	2 75	2 75	2 75
Flattener.....	..do....	5 48	4 23	4 07	5 00	5 40	5 35	4 05	5 10	7 40	7 40	7 40
L ayer-out.....	..do....	1 06	1 50	1 50	1 50	1 00	2 15	2 15	2 00	2 50	2 50	2 50
L ayer-in.....	..do....	1 06	1 50	1 50	1 50	1 00	2 15	2 15	2 00	2 50	2 50	2 50
Leor-tender.....	..do....	1 06	1 50	1 50	1 50	1 00	2 15	2 15	2 00	2 50	2 50	2 50
Roller-boy .....	..do....	1 00	1 00	1 00	1 00	1 00	1 00	1 33	1 33	1 33	1 33	1 33
Pot-maker .....	..do....	3 75	3 75	3 75	3 75	3 75	3 75	3 75	3 75	3 75	3 75	3 75
Clay-tramper .....	..do....	1 25	1 10	2 05	2 05	1 05	2 00	2 10	2 10	1 06	1 06	1 06
Boss cutter .....	..do....	2 88	2 56	2 80	2 00	3 14	3 15	3 10	4 30	5 00	5 00	5 00
Cutter .....	..do....	2 88	2 56	2 80	2 00	3 14	3 15	3 10	4 30	5 00	5 00	5 00
Packer .....	..do....	1 06	1 50	1 40	1 50	1 05	2 00	2 00	2 00	2 50	2 50	2 50
Drawer.....	..do....	1 06	1 50	1 00	1 00	1 50	1 50	2 00	2 00	1 06	1 06	1 06
Laborer .....	..do....	1 25	1 25	1 00	1 00	1 10	1 10	1 30	1 30	1 50	1 50	1 50

Blowers at these works purchase their own blow-pipes at a cost of \$25 to each blower. The company keeps these pipes in repair. The cutters furnish their own diamonds at an expense of about \$15 per year each.

Since 1870 the works have been in operation an average of 10 months a year. This idleness is owing in some degree to overproduction, but chiefly to the unprofitableness of working during the extreme heat of summer.

The statement is made that the efficiency of labor increases in about the same proportion as wages decline, excessively high wages producing demoralization and inefficiency.

No labor-saving machinery or improvements have been introduced.

Belle Vernon, Pennsylvania.

[next page.]

[Continued on next page.]

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STATISTICS OF WAGES—WINDOW GLASS.

Robert C. Schmertz & Co., Belle Vernon, Pennsylvania—Continued.

Classes of employes.	Unit of payment.	DATES.								
		1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
Manager.....	Month.....	\$207 00	\$177 85	\$101 72	\$135 42	\$125 00	\$125 00	\$125 00	\$125 00	.....
Boss blower.....	Day.....	10 70	11 37	11 58	11 36	12 86	8 01	11 19	8 42	.....
Blower.....	do.....	8 10	7 87	7 25	5 24	7 51	7 03	7 31	7 96	.....
Gatherer or tending boy.....	do.....	3 84	3 84	3 84	4 61	4 61	5 38	5 38	4 80	.....
Master tensor.....	do.....	4 81	4 81	4 81	4 81	5 00	6 54	6 54	4 80	.....
Master tensor's helper.....	do.....	2 70	2 30	2 30	2 30	2 30	2 70	2 70	2 70	.....
Tensor.....	do.....	2 30	2 30	2 30	2 30	2 30	2 70	2 70	2 70	.....
Lime-sifter.....	do.....	2 30	2 00	2 00	2 30	2 30	2 78	3 07	2 70	.....
Mixer.....	do.....	2 30	2 30	2 00	2 30	2 30	2 78	3 07	2 70	.....
Batch-wheeler or filler-in.....	do.....	2 30	2 30	2 30	2 30	2 30	2 70	2 70	2 70	.....
Conl-wheeler.....	do.....	2 30	2 30	2 30	2 30	2 30	2 30	2 70	2 70	.....
Flattener.....	do.....	6 05	6 47	5 80	4 70	7 41	8 36	7 55	6 31	.....
Layer-out.....	do.....	1 92	1 92	1 92	1 92	2 57	2 70	2 70	2 00	.....
Layer-in.....	do.....	1 92	1 92	1 92	1 92	2 57	2 70	2 70	2 00	.....
Leer-tender.....	do.....	1 92	1 92	1 92	1 92	2 30	2 30	2 30	2 00	.....
Roller-boy.....	do.....	70	70	70	80	80	80	80	1 00	.....
Pot-maker.....	do.....	2 70	2 70	2 63	3 00	3 85	3 85	3 85	2 00	.....
Clay-tramper.....	do.....	1 75	1 50	1 50	1 50	2 00	2 00	2 00	1 50	.....
Boss cutter.....	do.....	8 47	9 30	8 74	10 15	9 04	11 39	16 20	11 33	.....
Cutter.....	do.....	6 79	6 67	5 48	6 67	8 70	6 03	7 33	8 97	.....
Packer.....	do.....	2 78	3 01	3 88	3 11	3 70	3 14	3 38	2 35	.....
Driver.....	do.....	1 50	1 50	1 50	1 50	2 00	2 00	2 00	2 00	.....
Laborer.....	do.....	1 50	1 50	1 50	1 50	2 00	2 00	2 00	2 00	.....

REMARKS.—These works were established in 1836. Wages, however, are given only from 1866. The schedule states: "In making up the wages table we allowed 6 days weekly for blowers and all other employes and made no deduction for holidays."

There have been no opportunities for extra earnings. The statement is made that the earnings could be increased by turning out a larger product, which the workmen, notably the blowers, gatherers, flatteners, and cutters, could do. The limit of production allowed by their union is scarcely ever reached.

There are no allowances.

The statement made in previous schedules may be repeated here. The blowers purchase their own pipes, except the large double-strength blowers, which are furnished by the establishment. All other tools are provided by the works. The cutters, however, purchase their own diamonds.

These works have paid every week in cash since their commencement. Blowlers and gatherers work from 8 to 10 hours per day 5 days a week; flatteners and cutters, 10 hours daily; all other labor, from 8 to 10 hours, according to circumstances; none longer than 10 hours. The statement is made that, owing to the peculiar nature of this manufacture, no change can be made in the hours of labor that

would be any more healthful and beneficial to the employes or that would in any way change their character or happiness.

From 1866 to 1870 the works were in operation $9\frac{1}{2}$ months on an average each year; from 1871 to 1875, $9\frac{1}{2}$; from 1876 to 1880, $10\frac{1}{2}$ months. The causes of the irregularity are stated to be strikes, lockouts, and occasionally, but very rarely, over-production, together with the stoppage for the summer months, which is general in this industry.

No statement is made concerning the relation of wages and labor to selling price and cost.

There has been an increase in the efficiency of labor, due to the greater care exercised by the manufacturers in the management of their business, and their determination not to be behind any of the European manufacturers in their line.

The following statement is made: "No labor-saving machinery and improvements have been introduced, and there very probably never will be any, into the manufacture of ordinary cylinder glass. The strong-limbed, muscular, and powerful-lunged animal known as man is the best machine ever invented, and no improvement has been made since his introduction into the manufacture of window glass more than 300 years ago."

HATS.

Thirty-two schedules were sent to as many establishments manufacturing hats of different kinds, except silk hats. But 3 returns were received, of which 2 only are tabulated. These returns, however, especially that from New York, are quite interesting. Complete copies of pay-sheets were furnished by this establishment for all of the classes of employes for which yearly wages are given. The amounts in the table are the actual average yearly earnings of the employes of the classes mentioned. For example, the rates given against the finisher in the finishing-room are the actual average earnings for each year of 9 finishers; in the trimming-room the wages of trimmers are the actual average earnings of 7 employes.

In this schedule the statement is made that the earnings would have been much greater were it not for the irregularity of employment, growing out of causes which will be mentioned under the head of "regularity of employment".

Extra earnings or deductions.—In the New York schedule, which is for an establishment making fur and wool-felt hats, it appears that there are constant opportunities for extra earnings at certain seasons of the year, though the regular work is very irregular. The work, however, is not of such a nature that the difference between the earnings for regular time or hours and over-time can be actually ascertained except in rare cases. The following interesting table is given for the three years 1878, 1879, and 1880, showing the details of the work of two men employed in general work:

	No. 1.			No. 2.		
	1880.	1879.	1878.	1880.	1879.	1878.
Regular time worked days..	260 $\frac{3}{4}$	275 $\frac{6}{8}$	245 $\frac{3}{4}$	288	265 $\frac{3}{4}$	244
Pay per day	\$1 75	\$1 50- 1 75	\$1 50	\$1 25- 1 75	\$1 25	\$1 25
Total pay for year, regular time	\$450 40	\$435 03	\$368 75	\$363 78	\$332 10	\$310 11
Over-time worked hours..	113 $\frac{1}{2}$	272	340	48	75	50
Total earnings for over-time	\$22 70	\$44 83	\$53 05	\$7 22	\$11 20	\$7 52
Total earnings per year	\$470 10	\$482 00	\$421 80	\$371 00	\$343 30	\$317 58

In regard to these earnings it is stated: "These men get the highest amounts that men at their labor can earn in this establishment. There is so much time when little or nothing is doing."

In the rates of wages given in this New York return earnings for over-time are included.

In the other return, which is from an establishment making light-colored planters' hats and sombreros, there is no over-time.

At neither establishment are there any allowances or deductions.

Payments.—At the New York establishment part of the finishers are paid every two weeks, and other labor monthly. At the Pennsylvania establishment all workmen are paid monthly. At both establishments payment has always been in cash.

Hours of labor.—The nominal hours of labor at the New York establishment are 10, but the statement is made that employment is so irregular that probably for half the year but few, except some routine laborers, ever get a full 10 hours' work in a day, and they but rarely.

At the Pennsylvania establishment finishers and sizers work 9 hours a day; day-hands, 10 hours.

Regularity of employment.—The custom of the New York factory is to run quite full from 6 to 8 months a year, half-time about 2 to 4 months, and stop work for 2 months. In 1866 more than half the season was lost through a strike, and in 1869 there was another strike of 3 months' duration. Apart from strikes, the cause of irregularity is stated to be constant and rapid changes in styles, fluctuations of the market, and a close dependence on sales and orders. The irregularity from this latter cause is so great that sometimes the employes will be crowded with work in the forenoon, while in the afternoon there will be nothing for them to do.

The irregularity in the Pennsylvania establishment has not been so great. From 1865 to 1870 the works averaged 10 months; from 1871 to 1875, 11 months, and from 1876 to 1880, 12 months. Over-production is stated to be the chief cause of idleness.

Relation of wages and labor to selling price and cost.—The following statement as to prices of product, labor cost, etc., is given in the Pennsylvania return; it is stated that wages are about 48 per cent. of total cost:

Prices, labor cost, etc., of planters' hats per dozen at a Pennsylvania factory.

Year.	SELLING PRICE.		LABOR COST.	
	Planter.	Half-planter.	Planter.	Half-planter.
1865.....	\$14 00	\$10 00	\$5 00	\$4 00
1870.....	14 00	10 00	4 00	3 00
1875.....	12 00	9 00	4 00	3 00
1880.....	10 00	7 50	3 50	2 90

Efficiency of labor.—No statement in either schedule.

Labor-saving machinery and improvements.—The Pennsylvania schedule reports that blocking-machines have been introduced, also machinery in the trimming-room; the result being a reduction in the cost of production and a decrease in the number of employes.

Wages in felt-hat making in England.—For the purpose of comparison with our own tables, the following statement as to wages paid in Manchester, England, and its neighborhood in the manufacture of felt hats is inserted. It is taken from *Miscellaneous Statistics of the United Kingdom*, Part IX. The wages are for the year 1880:

Wages in the manufacture of felt hats in Manchester, England, and neighborhood.

Proportion of persons employed per 100 hands.	Description of occupations.		Rates of wages per week.	Hours of labor per week.
21	Body-makers	Men	\$5 93	50½
		Men	a 6 50	50½
		Lads and boys	2 12	50½
		Women	2 00	50½
		Women	a 3 99	50½
8	Proofers	Men	5 14	50½
		Lads and boys	2 00	50½
4	Blockers	Men	a 7 32	50½
		Men	5 26	50½
		Lads and boys	2 18	50½
2	Dyers	Men	4 96	50½
		Lads and boys	2 00	50½
12	Finishers	Men	6 20	50½
		Lads and boys	2 00	50½
38	Trimmers	Women	a 8 15	50½
		Girls	a 1 37	50½
14	Lashers	Girls	85	20½
6	Shapers	Men	5 63	50½
		Men	a 5 81	50½
100				

a For piece-work.

Silk hats.—Twenty-two schedules were sent to as many manufacturers of silk hats; but 2 returns were received, in neither of which was the information as to rates of wages sufficient to justify tabulation.

In one, from Danbury, Connecticut, the statement is made that all work is done by the piece. The average earnings for male employes are about \$12 per week, and for females about \$8.

Hat-finishers, as a rule, furnish their own irons, curlers their own tools, and trimmers their own thread. The expense of these, however, would reduce the wages of employes but slightly.

In busy seasons the hours of labor average 10; in dull seasons, which occur twice a year, employment is somewhat irregular and hours much shorter. The busy season, when full time is made, is about 8 months. The balance of the year employes average about half time.

In one schedule the price of hats per dozen, in 1880, is given at \$21; in the other at \$18. In both the cost of labor is put at \$7 per dozen. It is also stated that the percentage of wages to cost is over one-third.

A most interesting schedule in connection with this industry was received from Mr. George Moore, secretary of the trade-union, in connection with this business. It is not only a very complete statement, but is noteworthy as being one of the very few returns received from employes.

The wages in Philadelphia since 1840 of four classes of employes are given as follows:

Average earnings in the manufacture of silk and fur hats in Philadelphia from 1840 to 1880.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1875.	1870.	1865.	1860.	1855.	1850.	1845.	1840.
Foreman.....	Week	\$10 00	\$10 00	\$20 00	\$15 00	\$12 00	\$12 00	\$12 00	\$12 00	\$12 00
Journeyman.....	do	9 00	16 00	16 00	12 00	10 50	12 00	10 00	11 00	11 00
Trimmer.....	do	5 00	7 00	8 50	7 00	5 00	5 00	4 00	4 00	3 50
Plush-sewer.....	do	6 00	6 50	9 00	7 50	6 00	6 00	3 50	3 50	3 00

NOTE.—Under the head of "journeymen" are included three classes of workmen—curlers, body-makers, and finishers. The trimmers and plush-sewers are women.

Though this statement is for Philadelphia, it will apply to the whole United States, the rates of wages being uniform all over the country with the exception of San Francisco, California.

Extra earnings or deductions.—There are no extras or allowances. Employes, however, furnish their own tools, but the cost is so little as not to be worth noticing. The tools last a lifetime, and \$25 will buy a complete set.

Payments, since 1840, have always been weekly and in cash. Up to 1845 pay was received in "wild-cat money", upon which there was a discount of from 2 to 10 per cent. A resolution was passed by the men demanding current funds, to which the employers acceded.

Hours of labor.—As all work is piece-work, there are no regular hours of employment.

Regularity of employment.—The following statement is made regarding the number of months employed in the years named:

Years.	Months employed.	Years.	Months employed.
1840 to 1845.....	6	1861 to 1865.....	8
1846 to 1850.....	7	1866 to 1870.....	9
1851 to 1855.....	7	1871 to 1875.....	8
1856 to 1860.....	6	1876 to 1880.....	6

It is stated that it would be better for the health of the employes if the work was regular, but this seems to be impossible. Owing to the changing fashions in silk hats, width of brims, etc., goods can not be made up in advance of the season, and when the demand comes it is all at once.

Relation of wages and labor to selling price and cost.—The following statements as to prices of product and cost of labor are given:

Year.	SELLING PRICE.			COST OF LABOR.
	Silk hats, per dozen.	Cassimere hats, per dozen.	Beaver hats, per dozen.	Silk hats, per dozen.
1840.....	\$10 00 to \$48 00	\$24 00 to \$36 00	\$26 00 to \$48 00	\$7 00 to \$9 50
1845.....	19 00 to 48 00	24 00 to 36 00	36 00 to 48 00	7 00 to 9 50
1850.....	10 00 to 48 00	24 00 to 36 00	36 00 to 48 00	8 00 to 10 00
1855.....	19 00 to 48 00	24 00 to 36 00	36 00 to 48 00	8 00 to 10 50
1860.....	21 00 to 48 00	27 00 to 48 00	36 00 to 54 00	8 00 to 10 50
1865.....	54 00 to 114 00	48 00 to 84 00	54 00 to 72 00	22 00
1870.....	48 00 to 84 00	45 00 to 72 00	72 00	22 00
1875.....	42 00 to 84 00	42 00 to 54 00	72 00	20 00
1880.....	36 00 to 75 00	39 00 to 51 00	69 00	16 00 to 17 00

NOTE.—The cost of labor does not include the wages of foreman.

Healthfulness.—An interesting statement is made regarding the healthfulness of the employment. The following table shows total membership of the union, which includes all the hat-makers, and the number of deaths in each year from 1872:

Year.	Member-ship.	Deaths.
1872.....	978	7
1873.....	1,039	21
1874.....	812	16
1875.....	833	14
1876.....	719	15
1877.....	661	10
1878.....	557	5
1879.....	537	10
1880.....	640	10

Effect of tariff.—In this schedule there is a complaint regarding the tariff on silk plush as it existed at the time the schedule was forwarded. The tariff on silk plush was 60 per cent. ad valorem. It is stated that it is not manufactured in this country, and although a manufactured article, it is to the hat-maker a raw material. The manufactured goods that are imported pay the same duty as the silk plush. Both employers and employes regard this as the greatest drawback to their business. It requires considerable mechanical skill to finish a hat after the hat is made, and a reduction of the duty on this plush would not, it is claimed, affect any other branch of manufacturing in this country.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

W. C. Waring, Belknap & Co., Yonkers, New York.

[FUR AND WOOL-FELT HATS.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
<i>Finishing-room.</i>											
Foreman	Week...	\$40 00	\$40 00	\$40 00	\$40 00	\$45 00	\$45 00	\$40 00	\$35 00	\$35 00	\$35 00
Second hand	do			35 00	35 00	35 00	35 00	35 00	35 00	35 00	35 00
Finisher	Year...	553 00	610 00	541 00	552 00	554 00	709 00	603 00	704 00	720 00	693 00
<i>Bandbox-shop.</i>											
Foreman	Week...	15 00	15 00	15 00	16 50	16 50	18 50				
Laborer (female)	Year...	287 00	253 00	178 00	194 00	214 00	281 00				
<i>Dye-house.</i>											
Overseer	Week...	21 00			12 00	18 00	38 46		36 00	30 00	30 00
Second hand	do	13 50	10 50	9 00	9 00	9 00	10 00	10 00	10 50	10 50	9 00- 10 50
Laborer	do	7 00- 8 00	6 00- 7 50	6 00- 7 50	6 00- 7 50	6 00- 7 50	9 00	9 00	9 00	9 00	
Boy	do	4 00	4 00	3 50	3 50	4 00- 4 50			3 50- 4 00		
<i>Trimming-room.</i>											
Foreman	Month..	150 00	150 00	150 00	150 00	150 00	150 00	125 00	125 00	125 00	83 33½
Second hand	Week...	15 00	15 00	15 00	15 00	15 00	15 00	15 55½	15 55½	14 22½	15 00
Machine-repairer	do	18 00	18 00	18 00	18 00	15 00	12 00	33 33½	33 33½	27 78	27 78
Skilled laborer	do	9 00- 10 00	9 00	7 50- 8 00	7 50	7 50					
Forewoman	Year ..	505 92	524 88	497 15	492 47	547 75	542 20	514 49	557 49	529 32	510 53
Tripper (girl)	do	273 00	245 00	236 00	221 00	236 00	256 00	339 00	311 00	300 00	271 00
Machine-girl	do	450 00	425 00	341 00	317 00	387 00	481 00	558 00	493 00	520 00	427 00
<i>Fur department.</i>											
Foreman	Week...	30 00	28 00	30 00							
Second hand	do	21 00	12 00	16 00							
Laborer	do	6 00- 7 50	6 00	8 00							
Boy	do	3 50- 5 00	4 00- 4 50								
<i>Drying room.</i>											
Overseer	do	9 00	9 00	9 00	12 00	12 00	12 00	12 00	13 50	13 50	12 00
Laborer	do	4 00- 6 00	4 00- 6 00	3 50- 6 00	10 50	10 50	10 50	10 00	9 00	9 00	10 00
<i>General.</i>											
Block-maker	do	25 00	25 00	24 00- 25 00	24 00- 25 00	15 00- 25 00	18 00- 27 00	21 00- 24 00	21 00- 30 00	21 00- 30 00	21 00- 30 00
Printer	do	9 00	7 00	7 00	7 00	7 00	7 00	5 00			
Sweat-cutter	do	15 00	15 00	21 00	21 00	21 00	24 00	24 00	25 50	21 00	21 00
Carpenter	do	10 50- 18 00	18 00	22 50	25 50	12 00- 21 00	18 00- 24 00	18 00- 21 00	21 00- 24 00	21 00- 24 00	21 00- 24 00
Machinist	do	18 00	18 00	18 00	18 00	21 00	24 00	21 00	24 00	27 00	27 00
Assistant machinist	do	7 50- 9 00	7 50	7 50	7 50					13 50	13 50
Engineer	do	23 08	23 08	23 08	23 08	23 08	23 08	23 08	23 08	23 08	23 08
Fireman	do	15 00	15 00	15 00	15 00	12 00	12 00	15 00	15 00	12 00	12 00
Watchman	do	11 54- 13 84½	11 54- 13 84½	11 54- 13 84½	11 54- 13 84½	13 84½- 17 31	13 84½- 17 31	13 84½- 17 31	11 54- 15 00	11 54- 15 00	11 54- 15 00

W. O. Waring, Belknap & Co., Yonkers, New York—Continued.

Classes of employes.	Unit of payment.	DATES.									
		1870.	1880.	1888.	1897.	1899.	1905.	1904.	1903.	1902.	1901.
<i>Finishing-room.</i>											
Foreman	Week...	\$40 00	\$40 00	\$35 00- 40 00	\$40 00	\$30 00- 40 00	\$24 00- 25 00	\$21 00- 24 00	\$21 00	\$21 00	.....
Second hand	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finisher	Year...	497 00	510 00	652 00	625 00	563 00	786 00	.....	.....	.....	.....
<i>Bandbox-shop.</i>											
Foreman	Week...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laborer (female)	Year...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Dye-house.</i>											
Overseer	Week...	30 00	30 00	30 00- 27 00	24 00- 30 00	21 00- 24 00	21 00	21 00	15 00- 18 00	15 00	.....
Second hand	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laborer	do	9 00	10 00	9 00	10 00- 10 50	9 00	7 50	6 00	6 00	.....	.....
Boy	do .....	.....	.....	.....	4 00- 4 50	.....	.....	.....	.....	.....	.....
<i>Trimming-room.</i>											
Foreman	Month...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Second hand	Week...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Machine-repairer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Skilled laborer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forewoman	Year...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trimmer (girl)	do	268 00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Machine-girl	do	401 00	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Fur department.</i>											
Foreman	Week...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Second hand	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laborer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boy	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Drying-room.</i>											
Overseer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laborer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<i>General.</i>											
Block-maker	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Printer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sweat-cutter	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Carpenter	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Machinist	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Assistant machinist	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Engineer	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fireman	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Watchman	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Isaac W. Levan & Son, Reading, Pennsylvania.

[FELT HATS.]

Classes of employes.	Unit of payment.	DATES.														
		1870.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Engineer	Day...	\$2 25	\$2 00	\$2 00	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 25	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Dyer	do	2 25	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 00	2 00	3 00	3 00	3 00
Assistant dyer	do	75	75													
Carder	do	2 25	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 25	2 25	3 00	3 00	3 00	3 00	3 00
Assistant carder	do	75	75	75	60	60	60	60	60	60	60	1 75	1 75	1 75	1 75	1 75
Feed-girl	do	35	35	35	35	35	35	35	35	35	35	40	40	40	40	40
Former-girl	do	30	30	30	30	30	30	30	30	30	30	35	35	35	35	35
Weigher	do	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Picker-boy	do	50	50	50	50	50	50	50	50	50	50	50	50	50	75	75
Hardener	Hundred	45	45	45	50	50	55	55	55	55	55	65	65	65	65	65
Sizer	Dozen	36	30	30	30	34	34	34	34	34	34	38	38	38	38	38
Blocker	do	9	9	9	10	10	10	10	10	10	10	14	14	14	14	14
Box-maker	do	15	15	15												
Wool-sorter	Day...	40	50	50	50	45	45	45	45	45	45	40	40	40	40	40
Laborer (boy)	do	40	40	40	40	40	40	40	40	40	40	50	50	50	50	50
Stiffener	Dozen	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5
Finisher	do	37	32	32	40	40	40	40	40	40	45	45	45	45	45	45
Packer	Day...	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75
Trimmer	Dozen	8	8	8	8	9	9	9	9	9	9	12	12	12	20	20
Binder	do	2½	2½	2½	2½	3	3	3	3	3	3	3	3	3	3	3
Sweater	do	2	1½	2	2	2½	2½	2½	2½	2½	2½	3	3	3		

THE ICE INDUSTRY.

No attempt was made to secure the rates of wages in connection with the harvesting and distribution of ice. Two returns were received from Peoria, Illinois, which are so complete that they are inserted.

No over-time, allowances, or deductions are reported. At both works employés are paid weekly in cash.

The hours of labor are from 10 to 12 a day. The character of the industry is such that employment is given only 6 or 7 months a year.

The price of ice per ton is given as follows:

Year.	Price.
1860.....	\$2 50
1865.....	2 50
1870.....	\$3 00 @ 6 50
1875.....	4 00 @ 5 00
1880.....	6 00 @ 7 50

Woodruff & Co. state that the cost per ton, including waste, harvesting, and delivery, will average \$2 50.

The only labor-saving appliance introduced has been a steam-elevator for hoisting the ice from the river to the house. It has reduced cost by permitting the housing of a larger quantity in a given time.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

N. L. Woodruff & Co., Peoria, Illinois.

Classes of employés.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Engineer	Day	\$3 00	\$2 50	\$2 00										
Hook-carrier.....	do	2 00	1 50	1 50		\$1 75	\$2 00	\$2 00	\$1 75	\$1 75	\$1 75	\$1 75	\$2 00	\$1 75
Plower.....	do	2 50	2 00	1 50		2 00	2 00	2 00	1 75	1 75	1 75	1 75	2 00	1 75
Packer.....	do	1 75	1 50	1 25		1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 75	1 50
Spudder.....	do	1 75	1 50	1 25		1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 75	1 50
Teamster.....	do	1 25	1 00	75	\$1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 25
Sawyer.....	do	1 75	1 50	1 25		1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 75	1 50
Peddler.....	do	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75	2 00	1 75
Laborer.....	do	1 50	1 25	1 00	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 50	1 25
Carpenter.....	do	1 75	1 50	1 50	2 00	2 00	2 00	2 50	2 50	2 75	3 00	3 50	3 50	3 00

Classes of employés.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Engineer	Day													
Hook-carrier.....	do	\$1 75	\$1 75	\$1 50	\$1 50	\$1 25	\$1 25	\$1 25	\$1 00	\$1 00	\$1 25	\$1 25	\$1 25	\$1 00
Plower.....	do	1 75	1 75	1 50	1 50	1 25	1 25	1 25	1 00	1 00	1 25	1 25	1 25	1 00
Packer.....	do	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 00	1 00	1 25	1 25	1 25	1 00
Spudder.....	do	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00
Teamster.....	do	1 25	1 25	1 00	1 00	1 00	75	75	60	60	75	75	75	60
Sawyer.....	do	1 50	1 50	1 25	1 50	1 25	1 25	1 25	1 00	1 00	1 25	1 25	1 25	1 00
Peddler.....	do	1 75	1 75	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 00
Laborer.....	do	1 25	1 25	1 00	1 25	1 00	1 00	1 00	75	75	75	75	75	75
Carpenter.....	do	3 00	2 75	2 50	3 00	2 00	1 75	1 50	1 50	1 50	1 50	1 50	1 50	1 25

STATISTICS OF WAGES—ICE.

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H. Detweiler, Peoria, Illinois.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman.....	Day.....		\$2 00	\$2 00	\$2 25	\$2 25	\$2 25	\$2 25	\$2 00	\$2 00	\$2 00	\$2 00
Engineer.....	do.....		2 75	2 00	2 50	2 50						
Carpenter.....	do.....		2 25	2 00	2 25	2 50	2 00	2 00	2 50	2 50	2 25	2 00
Sawyer.....	do.....		1 50	1 25	1 75	1 75	1 75	1 75	2 00	2 00	1 75	1 75
Plowman.....	do.....		1 50	1 25	1 75	1 75	1 75	1 75	2 00	2 00	1 75	1 75
Laborer.....	do.....		1 25	1 00	1 50	1 50	1 50	1 50	1 75	1 75	1 50	1 50
Packer.....	do.....		1 50	1 25	1 75	1 75	1 75	1 75	2 00	2 00	1 75	1 75
Peddler.....	do.....		1 80½	1 65½	1 92½	1 92½	1 95½	1 92½	1 80½	1 65½	1 65½	1 65½
Collector.....	do.....		1 53½	1 53½	1 53½	1 92½	1 92½	1 92½	1 73	1 34½	1 34½	1 34½
Bookkeeper.....	do.....		2 30½	2 30½	2 30½	3 27	2 88½	3 27	2 69½	2 50	2 50	2 50